

2006

Bulletin: General Catalog Issue 2006-2007

Portland State University

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Bulletin



2006

2007

**PORTLAND STATE UNIVERSITY
BULLETIN 2006-2007
(USPS 439-380),
Vol. 40 No. 4, Summer 2006**

Periodicals postage paid at Portland, Oregon. Published four times a year: quarterly (fall, winter, spring, and summer) at Portland State University, 1721 SW Broadway, Portland OR 97201. (POSTMASTER: Send address changes to Portland State University Bulletin, P.O. Box 751, Portland, OR 97207.)

Copies of this catalog may be obtained by mailing \$6.00 plus \$3.00 postage and handling to the PSU Bookstore, General Book Department, 1715 SW Fifth Avenue, Portland, OR 97201. Other countries: \$6.00 plus air-mail postage.

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Printed on recycled paper.

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ADMISSIONS INFORMATION

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Toll free: **1-800-547-8887**

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Affirmative Action , 122 Cramer Hall	503-725-4417
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Student Affairs , 433 Smith Memorial Student Union	503-725-4422
Summer Session , 101 Extended Studies Building	503-725-8500

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Bulletin

*General
Catalog
Issue*

2006-2007



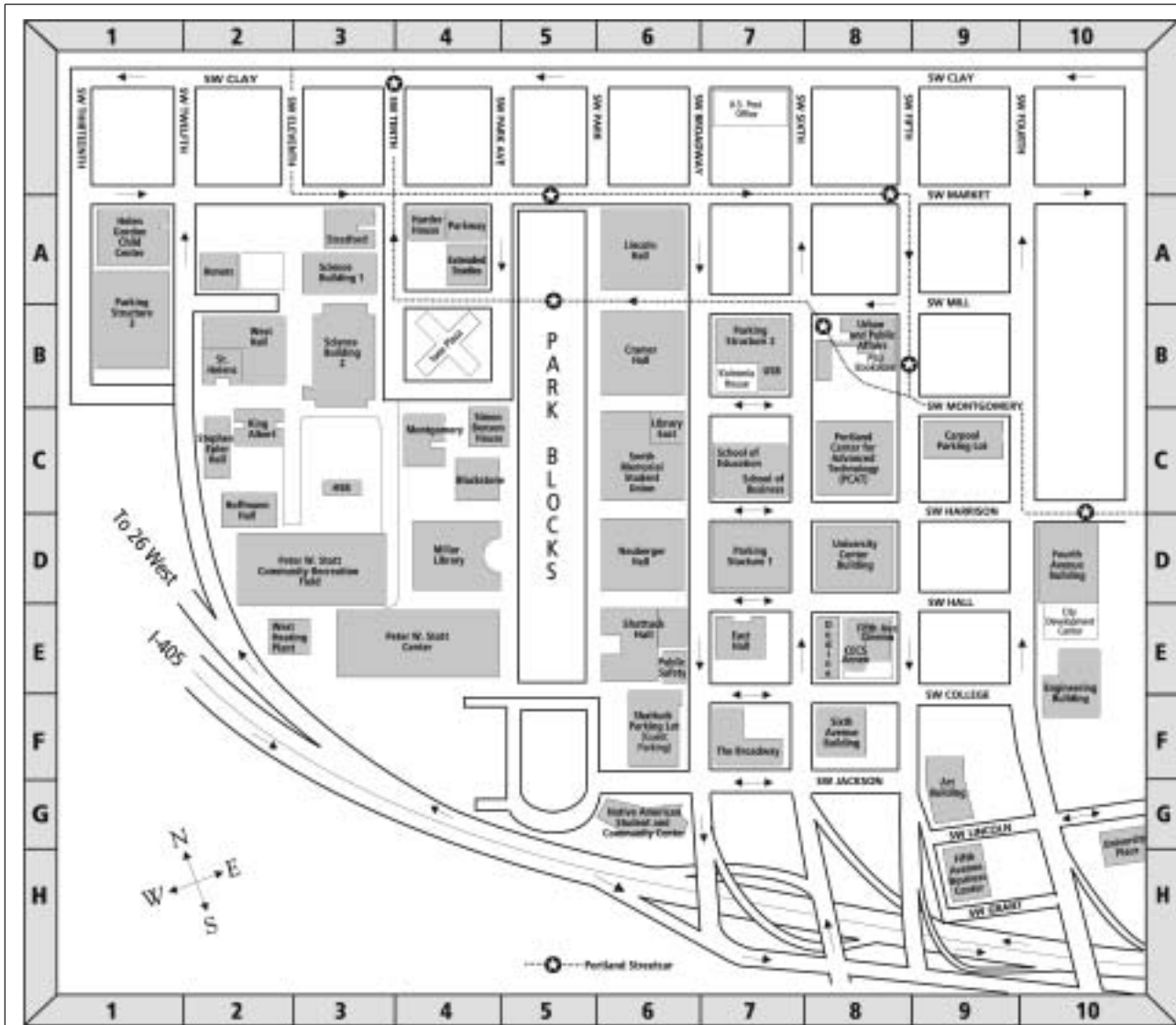
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Portland State University campus map



Building name.....	Location
Art Building	9-G
The Broadway.....	7-F
Business Administration, School of	7-C
Campus Ministry (Koinonia House).....	7-B
Campus Public Safety.....	6-E
Cramer Hall.....	6-B
East Hall.....	7-E
Education, Graduate School of	7-C
Engineering Building (EB).....	10-E
Extended Studies.....	4-A
Fifth Avenue Business Center.....	9-H
Fifth Avenue Cinema.....	8-E
Fourth Avenue Building	10-D
Harder House.....	4-A
Harrison Street Building (HSB).....	3-C
Helen Gordon Child Development Center.....	1-A
Hoffmann Hall.....	2-C
Honors Building, University.....	2-A
Koinonia House (Campus Ministry).....	7-B

Library East	6-C
Lincoln Hall.....	6-A
Millar Library, Branford P.....	4-D
Native American Student and Community Center.....	6-G
Neuberger Hall.....	6-D
Parking 1.....	7-D
Parking 2.....	7-B
Parking 3.....	1-B
Peter W. Stott Center.....	4-E
Peter W. Stott Community Field	3-D
Portland Center for Advanced Technology	8-C
PSU Bookstore	8-B
Science Building 1.....	3-A
Science Building 2.....	3-B
Shattuck Hall.....	6-E
Simon Benson House.....	4-C
Sixth Avenue Building.....	8-F
Smith Memorial Student Union.....	6-C
University Center Building	8-D
University Place	10-G
University Services (USB)	7-B

Urban and Public Affairs, College of.....	8-B
West Heating Plant	2-E

Campus Housing

Blackstone.....	4-C
The Broadway.....	7-F
King Albert	2-C
Montgomery Court	4-C
Ondine.....	8-E
Parkway.....	4-A
St. Helens.....	2-B
Stephen Epler Hall	2-C
Stratford	3-A
West Hall	2-B

Catalog Quick Reference

Portland State University, operating from a solid base of liberal and professional arts and science, encourages innovative curricula both on the undergraduate and the graduate levels through its degree, certificate, and preprofessional programs.

Major academic units

COLLEGE OF LIBERAL ARTS AND SCIENCES
<http://www.clas.pdx.edu/>

SCHOOL OF BUSINESS ADMINISTRATION
<http://www.sba.pdx.edu/>

GRADUATE SCHOOL OF EDUCATION
<http://www.ed.pdx.edu/>

**MASEEH COLLEGE OF ENGINEERING AND
COMPUTER SCIENCE**
<http://www.cecs.pdx.edu/>

SCHOOL OF FINE AND PERFORMING ARTS
<http://www.fpa.pdx.edu/>

GRADUATE SCHOOL OF SOCIAL WORK
<http://www.ssw.pdx.edu/>

COLLEGE OF URBAN AND PUBLIC AFFAIRS
<http://www.upa.pdx.edu/>

Bachelor of Arts and Bachelor of Science degrees are available in a wide variety of fields from the academic colleges and professional schools. The Bachelor of Music degree is available for those seeking a professional music degree. Additionally, specialist certificate programs, minors, preprofessional programs, and secondary education programs supplement the major studies and provide many diverse opportunities. Master's degrees are offered in numerous disciplines, and the University offers 13 doctoral degrees, including degrees in applied psychology, biology, civil engineering, computer science, education, electrical and computer engineering, mathematics education, mathematical sciences, social work and social research, and four interdisciplinary degrees in which approximately a dozen departments participate.

See pages 9-11 for a list of the programs offered at PSU and consult the index for further information about these programs.

Summer Session / 503-725-8500

Approximately 1,200 courses are offered June-August for academic credit through the more than 40 departments that comprise PSU. Formal admission is not required for Summer Session and all students are charged in-state tuition, except non-residents taking 9 credit hours or more.

Summer Session offers the greatest possible flexibility in scheduling, with classes starting throughout the summer in formats that include two-day workshops through one-, two-, four-, and 11-week courses. Sequential courses are offered to enable students to complete a full year of courses (languages, science) in one term.

In addition to on-campus courses, there are several programs offered off campus and abroad. Students may choose from a variety of special events, including concerts, recitals, and lectures. Summer Session highlights include:

- ◆ Bel Canto Vocal Training Institute
- ◆ Chamber Music for Strings
- ◆ Chamber Winds
- ◆ Deutsche Sommershule am Pazifik
- ◆ Haystack Program in the Arts and Sciences
- ◆ International Visiting Professors
- ◆ Kodaly Certificate of Completion Program
- ◆ Self-Enhancement, Inc. Music Camp
- ◆ Summer Animator Intensive

The Summer Session office is located in the Extended Studies building, 1633 S.W. Park Avenue, Portland, Oregon. Open weekdays 8:00 a.m. to 5:00 p.m. throughout the year. A PSU Summer Session catalog is issued in early April. To obtain a copy contact the PSU Bookstore, visit www.pdx.edu/summer, or write to: PSU Summer Session P.O. Box 1491 Portland, Oregon 97207.



Academic calendar

	FALL 2006	WINTER 2007	SPRING 2007	SUMMER 2007	FALL 2007
International admission application priority filing dates	March 1	July 1, 2006	Nov. 1, 2006	Feb. 1	March 1
Graduate admission application	April 1	Sept. 1, 2006	Nov. 1, 2006	Feb. 1	April 1
Undergraduate admission application or re-enrollment—priority filing dates	June 1	Oct. 1, 2006	Feb. 1	May 1	June 1
†Advance registration begins	May 15	Nov. 6, 2006	Feb. 19	May 7	May 14
Classes begin (day and evening)	Sept. 25	Jan. 8	April 2	June 25	Sept. 24
Last day to enroll in classes, add a class, or make section changes	Oct. 8	Jan. 21	April 15	varies	Oct. 7
Last day of refund period and drop without course recorded	Oct. 20	Feb. 2	April 27		Oct. 19
Last day to make changes in grading option, drop from a class without permission	Oct. 27	Feb. 9	May 4	varies	Oct. 26
Last day to drop a class with department permission	Nov. 17	March 2	May 25	varies	Nov. 16
Final examinations	Dec. 4-9	March 19-24	June 11-16	‡Aug. 15-17	Dec. 3-8
Term ends	Dec. 9	March 24	June 16		Dec. 8
§Commencement days			June 16 or 17	Aug. 18	
Holidays	Nov. 10 Nov. 23-24	Jan. 15	May 28	July 4	Nov. 12 Nov. 22-23

Changes are published in the quarterly Schedule of Classes.

†Advance registration beginning dates are tentative. Refer to the quarterly Schedule of Classes for dates and procedures (www.pdx.edu/registration)

‡For eight-week courses.

§The annual commencement day is in June, and there is a summer ceremony in August. There are no ceremonies in fall or winter.

General undergraduate admission requirements

For U.S. citizens and U.S. immigrants

HIGH SCHOOL STUDENTS

High school students from standard, public high schools, or accredited private high schools must:

1. Graduate from standard or accredited high school with a minimum 3.00 grade point average (GPA). Students who do not have a 3.00 cumulative high school GPA may meet this requirement with a minimum SAT combined score of 1000 or higher on the SAT Reasoning Test's Critical Reading and Mathematics sections, or an ACT average score of 21 or higher. Students who do not meet the 3.00 GPA or 1000 SAT/21 ACT requirement may be admitted based on a combination of GPA and test scores, as seen on page 363.

2. Take the SAT and/or ACT and have scores sent directly to Portland State University. In 2005, ACT and the College Board added a writing composition exam portion to the standardized ACT and SAT I exams. Portland State requires the writing portion of either ACT and SAT I as part of its admission process. No minimum score is required for the writing exam portion unless student does not meet minimum GPA (see above).

3. Complete 14 units of college preparatory work with a grade of C- or better or submit Oregon Proficiency-based Admission Standards (PASS) scores of M, H, or E.

4 years/units English

3 years/units math to include

Algebra 2

3 years/units social science

2 years/units science

2 years/units of, or demonstrated proficiency in a second language. This requirement applies to students graduating from high school in 1997 or any year after. See "Second Language Proficiency Requirements."

HIGH SCHOOL STUDENTS FROM NONACCREDITED OR NONSTANDARD HIGH SCHOOLS, OR HOME-SCHOOLED STUDENTS

These students may seek admission to the University through the following alternative means:

1. **Aptitude tests.** Students must earn a combined score of 1000 or higher on the Scholastic Aptitude Test (SAT I) critical reading and math exam portions or an average score of 21 or higher on the American College Test (ACT).

and

Students must submit an average score of 470 or above (940 total) on two College Board SAT Subject Tests (Math level I or IIC and another test of the student's choice). An examination in a second language is strongly recommended to qualify the applicant for admission by meeting the language proficiency requirements. Students who do not take an SAT Subject test in a second language must prove language proficiency through another approved process.

and

Meet Second Language Proficiency Requirement. See "Second Language Proficiency Requirement."

or

2. Take Test of General Education Development (GED) and earn a minimum overall average score of 460 and a minimum score of 410 on each subject test (if taken before January 2001, an average score of 46 and a minimum score 40 on each subject test is required)

and

Meet Second Language Proficiency Requirement. See "Second Language Proficiency Requirement."

or

3. Enter Portland State as a College Transfer Student. See "College Transfer Students."

Admission of students graduated in 1984 or before. Students who graduated from high school in 1984 or before will not be required to meet the 14 units of prescribed subjects. They will, however, need to meet the requirements (or alternatives) effective fall term 1984. Students who attend a college or a university in the interim between high school graduation and admission will be required to meet the transfer requirements in effect at the time of their transfer.

NO HIGH SCHOOL GRADUATION

1. Students who did not graduate from high school may be considered for admission based on scores from the Test of General Education Development (GED). Students must earn a minimum overall average score of 460 and a minimum score of 410 on each subject test (if taken before January 2001, an average score of 46 and a minimum score 40 on each subject test is required)

and

Meet Second Language Proficiency Requirement. See "Second Language Proficiency Requirement."

or

2. Enter Portland State as a College Transfer Student. See "College Transfer Students" below.

COLLEGE TRANSFER STUDENTS

1. Students with 30 or more transferable quarter credits (20 semester credits) will be admitted as transfer students. Students with fewer than 30 transferable quarter credits must meet both the requirements for college transfer and high school students. Official high school and college transcripts must be submitted.

2. Meet minimum GPA requirement: 2.25 or 2.00 if students present a transferable associate's degree or an Oregon Transfer Module (OTM).

3. Meet Second Language Proficiency Requirement. See "Second Language Proficiency Requirement."

For international students

1. Minimum grade point average (GPA) requirement:

- a. High School/Secondary School Graduates: Cumulative grade point average (GPA) of

3.00 when adjusted to the U.S. 4.00 grading scale

- b. Transfer Students: Minimum cumulative grade point average (GPA) of 2.25 on 30 or more transferable credits, excluding ESL credits, when adjusted to the U.S. 4.00 grading scale, or minimum 2.00 if student presents a transferable associate's degree or an Oregon Transfer Module (OTM).

2. English Language proficiency requirement: Applicants who meet the English language proficiency requirement may enroll in academic classes. Those who do not meet this requirement will be restricted to ESL classes until the requirement has been met.

Applicants may demonstrate English language proficiency by submitting the following test results.

- ◆ Test of English as a Foreign Language (TOEFL). Paper-Based Test (PBT).....525
Computer-Based Test (CBT)197
Internet-Based Test (IBT)
Overall Score79
Subsection Scores
Reading18
Listening.....18
Speaking16
Writing16

- ◆ International English Language Testing System (IELTS). A minimum overall band score of 6.5 with minimum 6.0 on each individual band score is required.

Second language proficiency requirement

All applicants who have graduated from high school in 1997 or any year after must demonstrate proficiency in a second language. Students may demonstrate proficiency by meeting one of the following options:

- ◆ Pass with a C- or better, two years of the same high school-level second language
- ◆ Pass with a C- or better, the third year of a high school-level second language
- ◆ Pass with a C- or better two quarters or two semesters of college-level second language
- ◆ Pass a proficiency exam

Students must provide official high school or college transcripts to indicate the Second Language Proficiency Requirement has been met.

For a complete list of proficiency options available for meeting the Second Language Requirement (including American Sign Language), please contact the University's Office of Admissions, Registration and Records, or view the OUS Second Language Policy at www.ous.edu/enroll/enroll_info.html.

Admission appeals

Students who do not meet admission requirements may file an appeal for additional consideration. Contact the Office of Admissions, Registration and Records for more information.

General graduate admission requirements

Application to graduate programs at Portland State University requires two complete (but different) admissions packets, one sent to the Office of Admissions and one sent to the department. Complete applications are available from the individual academic departments.

University graduate admission eligibility is based on having been awarded a baccalaureate degree from a regionally-accredited institution and having achieved a minimal accepted GPA: an applicant with fewer than 9 letter-graded graduate credits is assessed on the undergraduate GPA; an applicant with 9 or more letter-graded graduate credits is assessed on the graduate GPA, which must be 3.00 or higher.

A student must be admitted formally to graduate status (regular, conditional, certificate) for a program of study to be planned with the assistance of a faculty adviser. Admission to regular or conditional degree status should be obtained at the earliest possible time in order to avoid loss of credit applicable to a degree. Courses taken at PSU in postbaccalaureate status or non-admitted status are pre-admission courses and must meet all applicable limits and requirements.

Regular status. Students who meet the University requirements and are fully accepted by their departments or schools as potential degree candidates are given regular status. Students must have regular status to be appointed graduate research or teaching assistants and to graduate with any degree or certificate.

Conditional status (University conditions only). Students who do not meet GPA requirements for regular admission to the University are given conditional admission status if they are fully accepted by their departments (see Qualified Status below). After completing 9 letter-graduate graded hours with a 3.00 or better GPA, these students will be given regular status. Students on conditional status may not be graduate research or teaching assistants. Students admitted to the University conditionally who do not achieve a 3.00 GPA after completing 9 letter-graded graduate hours will be dropped from their graduate programs. This condition can only be removed by the Office of Graduate Studies.

Conditional Status (both University and department conditions). Students who have both University and department conditions are subject to the University policy stated above and must also meet their department's conditions. Such students may not be graduate research or teaching assistants. Department conditions may be more rigorous than the University condition; the University condition must be met for the student to continue in graduate studies at Portland State University.

Qualified status (department condition only). Students whose department has imposed departmental prerequisites, GPA, or other requirements but who are eligible for a regular University admission are given qualified status. These students are eligible to be graduate assistants. A student may have both conditional and qualified admission status; in this case, the student is not eligible to be a graduate assistant. Department conditions can only be removed by the department.

Graduate certificate status. Students admitted only to a graduate certificate program may register for a maximum of 16 credits per term. They may not be graduate assistants. Graduate certificate students who are concurrently admitted to a graduate degree program do not have this restriction.

Certificate status. All students working in a planned program leading only to a postbaccalaureate certificate are given certificate status. Certificate students may be admitted to other categories of graduate study and concurrently pursue a certificate. This status includes students working on teaching certificates but does not include students admitted only to graduate certificate programs.

Postbaccalaureate status. Students not currently working for a degree but who wish to register for more than 8 credits of graduate credit courses may be admitted to postbaccalaureate status. A postbaccalaureate student wishing to be admitted to regular degree status must apply in the same way as any other applicant and must meet the general University requirements and be fully accepted by the department or school. A postbaccalaureate student may find departmental enrollment limitations on many courses. Courses completed in a postbaccalaureate status are not automatically applied toward a graduate degree; each course must be evaluated and recommended by the department and is considered pre-admission credit for which all applicable limits and requirements apply.

University requirements for admission to graduate courses and programs. To be admitted to Portland State University for the purpose of pursuing graduate work, applicants must satisfy minimum University requirements and be accepted by the department in which the graduate work is proposed. University graduate admission eligibility is based on having been awarded a baccalaureate degree from a regionally-accredited institution and having achieved a minimal accredited GPA: an applicant with fewer than 9 letter-graded graduate credits is assessed on the undergraduate GPA; an applicant with 9 or more letter-graded graduate credits is assessed on the graduate GPA, which must be 3.00 or higher. Any applicant whose native language is not English and who has not received a baccalaureate, master's or doctoral degree from a regionally accredited U.S. institution or an equivalently accredited non-U.S. institution with instruction exclusively in English must pass the Test of English as a Foreign Language (TOEFL) with a minimum score of 550.

Portland State University will not confer active admission status to any graduate student pending an expected baccalaureate degree without formal written notification from the Registrar of the conferring institution confirming that all requirements for the degree have been met and stating the date the degree will be conferred. If admitted on this basis, an official transcript showing the degree will be required during the term of admission or the admission will be canceled.

To be considered for admission as a regular degree student, the applicant must present a baccalaureate degree from an accredited institu-

tion with either a minimum cumulative GPA of 2.75 in all undergraduate courses or a cumulative GPA of at least 3.00 in all graduate credit earned at accredited institutions (a minimum of 9 letter-graded credits). Applicants with 9 or more letter-graded graduate credits must have a cumulative graduate GPA of at least 3.00, and this GPA supersedes the undergraduate GPA.

To be considered for admission as a conditional degree student, the applicant must present a baccalaureate degree from an accredited institution with a minimum cumulative GPA of 2.50 in all undergraduate courses. To be considered for admission as a graduate certificate student, the applicant must meet all requirements for regular or conditional graduate degree admission.

To be considered for admission as a postbaccalaureate certificate student, the applicant must present a baccalaureate degree from an accredited institution with either a cumulative GPA of 2.75 in all undergraduate courses or at least 9 credits with a cumulative GPA of 3.00 in graduate work in the proposed field of study earned subsequent to receiving the baccalaureate degree.

Departmental requirements. A department may have additional admission requirements based on previous academic achievement, scores on Graduate Record Examinations or other tests, letters of recommendation, a portfolio, or an autobiographical statement. Information regarding departmental requirements may be obtained directly from the specific department. The number of students admitted to a particular program is limited to the resources available.

Exceptional admission procedures. In situations beyond the control of a foreign applicant, when transcripts and documents are not available to confirm completion of a baccalaureate degree in a foreign university, the Vice Provost may employ a special admissions procedure. Upon referral by the Admissions staff responsible for foreign student admission and recommendation of the admitting department, a special panel consisting of three faculty may be appointed to review the materials available and interview the applicant. The panel shall consist of one member of the admitting department, one member of the Graduate Council, and a representative of the Office of Graduate Studies. The panel will evaluate the educational background and preparation of the applicant and review documents including letters and written testimony of persons who serve as references or are cognizant of the circumstances of the applicant's situation. The panel may determine that an equivalency of a baccalaureate degree was earned and, if so, may recommend that the student be admissible in regular or conditional status; or it may determine that an equivalency of a baccalaureate degree was not earned, and, if so, it may recommend that specific additional preparation be required in order to meet the admission standard. The dean of Graduate Studies shall make a final determination based upon the recommendation and the evidence presented.

Programs of study

	Minor	Certificate	Bachelor's	Master's	Doctorate
Accounting		■			
Administration of Justice	■		■	■	
Anthropology	■		■	■	1
Applied Linguistics Teaching English as a Second Language	■	■	■	■ 2	
Architecture	■		■		
Art Undergraduate Options: Art History; Drawing/Painting/Printmaking; Graphic Design; Sculpture Graduate Options: Painting, Sculpture, Painting/Sculpture	■		■	■	
Arts and Letters			■		
Biology Undergraduate Certificate: Biotechnology	■	■	■	■	■ 3
Black Studies	■	■	■		
Business Administration Undergraduate options: Accounting; Advertising Management; Finance: General Management; Human Resource Management; Information Systems; Marketing; Supply and Logistics Management; Food Industry Management Certificate Graduate option: Financial Analysis	■	■	■	■	1
Chemistry Undergraduate option: Biochemistry	■		■	■	3
Chicano/Latino Studies		■			
Child and Family Studies			■		
Civil Engineering Environmental Engineering minor Graduate option: Civil Engineering Management	■		■	■	■
Communication Studies	■	■ 4	■	■	
Community Development	■		■		
Computer Applications	■				
Computer Engineering			■	7	7
Computer Science	■		■	■	■
Conflict Resolution				■	
Economics	■	■ 4	■	■	1, 3, 5
Education⁶ Elementary Education Secondary Education Specialist Program options: Counseling; Curriculum and Instruction; Media/Librarianship; Policy, Foundations, and Administrative Studies; Special Education Educational Leadership Options: Administration; Curriculum and Instruction; Postsecondary Education; Special and Counselor Education		■ 4		■	■

	Minor	Certificate	Bachelor's	Master's	Doctorate
Electrical Engineering	■		■	7	7
Electrical and Computer Engineering		■ 4		■	■
Engineering Management Options: Project Management, Technology Management				■	1
English Writing	■		■	■	
Environmental Management				■	
Environmental Sciences and Resources Options: Biology; Chemistry; Civil Engineering; Economics; General; Geography; Geology; Physics		■ 4	■	■	■
Environmental Studies	■		■		
European Studies		■			
Foreign Languages Undergraduate options: Chinese, French, German, Japanese, Russian, Spanish, combination of two or more of these languages; Certificate: Teaching Japanese as a Foreign Language Graduate: French, German, Spanish	■	■	■	■	
Foreign Literatures and Languages				■	
Geography	■		■	■	3, 5
Geology Undergraduate option: Environmental Geology minor Graduate option: Geohydrology	■	■ 4	■	■	3
Gerontology		■ 4			
Health Studies Undergraduate options: Community Health Education; Health Sciences; Physical Activity/Exercise; School Health M.P.H.: Health Promotion	■		■	■	
History	■		■	■	
Interdisciplinary Film Studies	■				
Interdisciplinary Studies				■	
International Business Studies		■			
International Economics	■				
International Management				■	
International Studies African Studies; East Asian Studies; European Studies; Latin American Studies; Middle East Studies	■		■		
Latin American Studies		■			
Liberal Studies			■		
Manufacturing Engineering				■	
Mathematics	■	■ 4	■	■	■
Mathematics Education					■
Mechanical Engineering Materials Science and Engineering			■	■	1
Middle East Studies		■			

	Minor	Certificate	Bachelor's	Master's	Doctorate
Music Jazz minor Graduate options: Performance, Conducting	■		■	■	
Native American Studies	■				
Philosophy	■		■		
Physics	■		■	■	3
Political Science	■		■	■	5
Psychology	■		■	■	■
Public Administration M.P.A. option: Health Administration; M.P.H. option: Health Administration and Policy				■	
Public Administration and Policy					■
Science Options: Biology; Chemistry; Environmental; General; Geology		■	■		
Social Science			■	■	
Social Work				■	■
Sociology	■		■	■	1, 5
Software Engineering (Oregon College of Engineering and Computer Science)				■	
Speech and Hearing Sciences	■		■	■	
Statistics				■	
Systems Engineering		■ 4		■	
Systems Science Options for Ph.D.: Anthropology; Business Administration; Civil Engineering; Economics; Engineering Management; General; Mathematics; Mechanical Engineering; Psychology; Sociology		■ 4		■	■
Theater Arts	■		■	■	
Urban Studies and Planning Graduate option: Regional Planning	■	■ 4		■	■
Women's Studies	■	■	■		
Writing Options: Book Publishing, Fiction, Non-Fiction, Technical Writing				■	
Preprofessional Programs: agriculture; chiropractic; clinical laboratory science; cytotechnology; dentistry; forestry; law; medicine; naturopathic medicine; nuclear medicine technology; nursing; occupational therapy; optometry; osteopathy; pharmacy; physical therapy; physician assistant; podiatry; radiation therapy; veterinary medicine					

1 Departments participating in multidisciplinary doctoral program of systems science.

2 Offered by Department of Applied Linguistics as Teaching English to Speakers of Other Languages (TESOL).

3 Departments participating in multidisciplinary doctoral program of environmental sciences and resources.

4 Graduate certificate.

5 Departments participating in multidisciplinary doctoral program of urban studies.

6 M.A./M.S. offered by Graduate School of Education. M.A.T./M.S.T. offered in cooperation with appropriate department.

7 M.S., M.Eng., and Ph.D. in Electrical and Computer Engineering

General requirements for all baccalaureate degrees

Requirements for baccalaureate degrees

To earn a baccalaureate degree a student must complete (1) University requirements, (2) University Studies (general education) requirements, (3) specific requirements for the Bachelor of Arts, Bachelor of Music, or Bachelor of Science Degree, and (4) requirements for a major.

Students bear final responsibility for ensuring that the courses taken are applicable toward satisfying their degree requirements.

1. University Requirement

- ◆ Minimum number of credits (lower-division plus upper-division): 180 (180-205 in engineering)
- ◆ Minimum number of upper-division credits (300- and 400-level): 72

2. University Studies (General Education Requirement) (Not required for Liberal Studies or the Honors Program)

The purpose of the general education program at Portland State University is to facilitate students in acquiring and developing the knowledge, abilities, and attitudes which form a foundation for lifelong learning. This foundation includes the capacity and the propensity to engage in inquiry and critical thinking, to use various forms of communication for learning and expression, to gain an awareness of the broader human experience and its environment, and appreciate the responsibilities of persons to themselves, to each other, and to community.

To accomplish this purpose all freshmen entering with fewer than 30 prior university credits are required to complete the following program (See current *Schedule of Classes* for course descriptions and capstone offerings):

- ◆ **Freshman Inquiry.** One year-long course which must be taken in sequence (UnSt 100-level)15 credits
- ◆ **Sophomore Inquiry.** Students are required to choose three Sophomore Inquiry courses, each linked to a different University Studies cluster for a total of 12 credits (UnSt 200-level).12 credits
- ◆ **Upper-Division Cluster (Junior and Senior Years).** Students are required to select three courses (for a total of 12 credits) from one upper-division cluster (300 to 400-level courses designated with a U) which is directly linked to one of the three Sophomore Inquiry classes they have taken previously.12 credits

Note: Students may not use any course to satisfy both cluster and major requirements. Cluster courses must be taken outside of the major department. This includes courses that might be cross-listed elsewhere with the major prefix.

- ◆ **Senior Capstone.** This 6-credit capstone course (UnSt 421) is the culminating general education course for seniors. Students join an interdisciplinary team, develop a strategy to address a problem or concern in the community, and implement this strategy over one, two, or three quarters of work.6 credits

ATTENTION TRANSFER STUDENTS:

The following placement within University Studies is based on total credits accepted at term of admission to PSU.

- ◆ Transfer students who have earned fewer than 30 quarter credits of transfer work are required to complete all of the University Studies program requirements, including the entire sequence of Freshman Inquiry.
- ◆ Transfer students who have earned 30-44 quarter credits of transfer work are required to complete a Transfer Transition course (UnSt 201-210) and the University Studies program beginning with Sophomore Inquiry.
- ◆ Transfer students who have earned 45-89 quarter credits of transfer work are required to complete the University Studies program beginning with Sophomore Inquiry as follows: 45-59 credits, three courses; 60-74 credits, two courses; and 75-89 credits, one course. (The upper-division cluster must be linked to one of these Sophomore Inquiry classes.) Transfer Transition, if not required, may count as a Sophomore Inquiry course.
- ◆ Transfer students who have earned 90 or more credits of transfer work are required to complete the University Studies program beginning with an Upper-Division Cluster. It is recommended that they complete the Sophomore Inquiry course directly linked to the Upper-Division Cluster they choose.

ATTENTION CO-ADMITTED STUDENTS:

Contact the Community College Relations Office, 503-725-8387, for placement rules regarding University Studies.

3. Requirements for Bachelor of Arts, Bachelor of Music, Bachelor of Science Degrees

(Students must choose only one.)

Courses taken to satisfy BA/BS requirements may also be used to meet any other requirements if they conform to the regular qualification for those requirements.

- ◆ **For the Bachelor of Arts degree:** Students must complete 28 credits to include a minimum of 12 credits in the arts and letters academic distribution area, with a minimum of

4 credits in the area of fine and performing arts; a minimum of 12 credits in the science and/or social science distribution areas, with a minimum of 4 credits in the science distribution area; and 4 credits in a foreign language numbered 203 or higher (conducted in the target language). See foreign language requirements listed below.

Foreign language requirement. The B.A. language requirement is not defined in credits, but in terms of competence: for graduation, a student must demonstrate competence equivalent to that normally attained after two years of college study. Students with no previous knowledge of a foreign language are advised to complete two years in a language.

Students who already possess sufficient competence (or who wish to prepare themselves outside of formal classes) may meet the B.A. language requirement in any of the following ways: (1) Completion in any foreign language of 203 or its equivalent with a passing grade; (2) completion in any foreign language of a course that has 203 or higher as a prerequisite; (3) Demonstration of proficiency in a foreign language equivalent to that attained after two years of college study. There are three ways to demonstrate equivalency proficiency: a) in French, German, or Spanish, by passing the CLEP examination with a score high enough for second-year level credit (see page 47); b) in other languages regularly taught by the Department of Foreign Languages and Literatures, by passing a departmental examination with a score high enough for second-year level credit; c) in any language for which the Department of Foreign Languages and Literatures has a qualified tester, by passing a non-credit departmental examination. English satisfies the B.A. language requirement for students whose official transcripts demonstrate that their secondary education was completed in a foreign language. Such students may not enroll in first- or second-year courses in the language in which they received their secondary education. (See page 131).

- ◆ **For the Bachelor of Music degree:** Students must complete the program of music and applied music as prescribed by the Department of Music.
- ◆ **For the Bachelor of Science degree:** Students must complete 28 credits to include a minimum of 12 credits in the science academic distribution area (excluding mathematical sciences/statistics) a minimum of 12 credits in the arts and letters and/or the social sciences distribution areas, and 4 credits in mathematical sciences/statistics. A minimum of 8 of the 12 credits in the science distribution area must be in coursework with its inte-

grated or associated laboratory or field work. Unless otherwise specified, only courses with in the science distribution area that have an explicit indication of lab or field work as part of the catalog description will satisfy the B.S. degree requirement for lab/field work.

ACADEMIC DISTRIBUTION AREAS

- ◆ **The arts and letters academic distribution area consists of undergraduate courses from the following:** Applied Linguistics, Architecture, Art, Arts and Letters, Black Studies (BST 221, 351, 352, 353, 421, 424, 425, 426, 427 only), English, Foreign Languages and Literatures, Music, Philosophy, Speech Communication, Theater Arts, Writing.
- ◆ **The science academic distribution area consists of undergraduate courses from the following:** Biology, Chemistry, Environmental Studies, Geology, Mathematics/Statistics, Physics, Science.
- ◆ The social science academic distribution area consists of undergraduate courses from the

following: Anthropology, Black Studies (except BST 221, 351, 352, 353, 421, 424, 425, 426, 427), Chicano/Latino Studies, Child and Family Studies, Criminal Justice (AJ 220 and 330 only), Economics, Geography, History, International Studies, Political Science, Psychology, Social Science, Sociology, Urban Studies and Planning, Women's Studies.

4. Major Requirements

For major program requirements see description in this *Bulletin*.

GENERAL LIMITATIONS

- ◆ Maximum number of credits transferred from regionally accredited two-year institutions: 124
- ◆ Maximum number of correspondence credits (transferred from schools recognized as institutions of higher learning):60
- ◆ Maximum number of credits graded P (pass) that may be counted for graduation:45
(Note: This 45 credit maximum does not include credits with P grades accepted for transfer from

colleges or universities outside the United States)
Note restriction on P (pass) grades used for residence requirements (see below).

- ◆ Maximum number of Cooperative Education credits that may be applied toward degree requirements:12
- ◆ Minimum cumulative grade point average: 2.00 on all residence work and 2.00 on all courses, no matter where taken, in major field (some departments require a GPA greater than 2.00 in the major).
- ◆ Residence credit: 45 (excluding credit by examination) of the final 60 or 165 of the total credits presented. Restriction: At least 25 of the last 45 credits must be for differentiated grades. Credits earned by participation in the Oregon State Inter-institutional Program at the Malheur Field Station, some Oregon State System Programs of Study Abroad, and some National Student Exchange programs also count as residence credit.

Summary of procedures for master's degrees

The following outline summarizes the Portland State University procedural requirements for master's degrees. Additional information is in the Graduate Studies section and on the applicable forms; additional requirements may be imposed by specific programs.

1. Apply for admission about six months prior to registration. Check with the specific department about deadlines.
2. Prior to registration, become familiar with general regulations and procedures for the master's degree as described in the Bulletin.
3. Prior to first term registration, meet with faculty adviser assigned by program director and plan a preliminary program of study.
4. If graduate courses taken as an undergraduate and not used in the bachelor's degree are to be considered for use in the graduate program, the Reservation of Graduate Credit form (GO-10) must be filed in the Office of Graduate Studies no later than the term following admission to a graduate degree program. (Valid only for courses completed at Portland State University.) Reserved credits are subject to all pre-admission limits and requirements.
5. If pre-admission credit (courses taken at any institution before the term of formal admission to the PSU graduate degree program) or transfer credit (courses taken at any time from another accredited institution) is to be included in the master's program of study, the GO-21 form (the Proposal for Master's Pre-admission and/or Transfer Credit) is to be filed in the Office of Graduate Studies for approval. It is strongly suggested that this form be submitted early in the student's program; it must be approved before the Graduate Degree Program (GO-12) can be approved.
6. If admitted to conditional or qualified status, remove all deficiencies and/or conditions. Adviser will submit a Request for Change of Status form (GO-7) to change from qualified to regular status; conditional admission will automatically be changed to regular status after completion of the first 9 graded graduate credits with a 3.00 or better GPA.
7. If a foreign language is required, pass the foreign language exam. This requirement must be met before the GO-12 or oral exam committee can be approved and before any final exam may be taken. (See "Options for Meeting the Graduate Foreign Language Requirement for M.A. and M.A.T. Students," page 71.)
8. Submit a final Graduate Degree Program form (GO-12), planned with and approved by the faculty adviser and signed by the department chair or department graduate committee chair, to the Office of Graduate Studies no later than the first week of the anticipated term of graduation.
9. File Application for Degree form in the Office of Graduate Studies no later than the first week of the anticipated term of graduation. Deadlines for each term are available in the Office of Graduate Studies.
10. A minimum enrollment of one graduate credit is required during the term in which oral or written exams are taken. A thesis student must be registered for at least one graduate credit in every term in which the student is working on any phase of thesis, including data development or collection, writing, revision, defense, and final approval by the Office of Graduate Studies.
11. If thesis is to be submitted:
 - a. thesis proposal, Human Subjects Research Review Committee approval, and appointment of the departmental thesis committee must be completed before approval of the GO-12 (see 8 above);
 - b. adviser submits the Appointment of Final Oral Examination Committee form (GO-16M) for appointment of the representative of the Office of Graduate Studies two weeks before the end of the term preceding the term of defense. The chair of the examination committee and the Graduate Office representative must be regular, full-time PSU faculty, tenured or tenure-track, assistant professor or higher in rank; the other committee members may include adjunct faculty. If it is necessary to go off-campus for one additional committee member with specific expertise not available among PSU faculty, a CV for that proposed member must be presented; that member must be in addition to the required three PSU faculty members. All committee members must have master's degrees. No defense shall be valid without a thesis committee approved by the Office of Graduate Studies;
 - c. the oral examination (thesis defense) must be scheduled at least five weeks prior to the end of the term and all members of the committee, including the Graduate Office representative, must receive a complete copy of the thesis at least two weeks prior to the defense date. For summer term graduation, deadlines apply to the regular eight-week Summer Session dates; later completion will result in fall term graduation;
 - d. student must check with faculty adviser and thesis committee chair to assure completion of requirements prior to final examinations;
 - e. three copies of the unbound thesis and four copies of the abstract, in final approved form, must be submitted to the Office of Graduate Studies at least three weeks prior to close of the term in which the degree will be granted. Deadlines for each term are available in the Office of Graduate Studies. Required corrections must be made before graduation.
12. In the case of a non-thesis oral examination, the committee shall consist of at least two members of the student's department, including the candidate's adviser. At the discretion of the department, a faculty member from another department may be added; that member would be selected by the adviser, the department chair, or the departmental graduate committee chair, according to department policy. For M.A.T. and M.S.T. candidates, one member of the committee is required to be added from the Graduate School of Education. The oral examination must be scheduled no less than two weeks before the end of the term.
13. If there are any changes in the approved program, a Change in Graduate Degree Program form (GO-13) must be filed.
14. Schedule and pass final master's examinations, if required, at least two weeks before date of graduation. Deadlines for each term are available in the Office of Graduate Studies.
15. An Incomplete or In-Progress grade in any course, excluding thesis (see 16 below), which is on the approved program (GO-12) must be removed no later than two weeks before graduation.
16. All M (Missing) grades in PSU graduate courses that could potentially be letter graded must be removed no later than two weeks before graduation, even if the courses are not listed on the student's approved GO-12.
17. Adviser is responsible for the completion of the form Recommendation for the Degree (GO-17M), which is forwarded to the Office of Graduate Studies no later than the last day of the term of graduation. In-Progress grades for required thesis credits are changed on the form, eliminating the need for the Supplemental Grade Report for these courses.
18. The dean of Graduate Studies certifies that all requirements for the degree have been met and recommends the awarding of the degree.
19. Graduation.

Summary of procedures for doctoral degrees

The following outline summarizes the Portland State University procedural requirements for the doctoral degree. Additional information is in the Graduate Studies section and on the applicable forms; additional requirements may be imposed by specific programs.

PRE-CANDIDACY FOR DEGREE

1. After admission to a specific program, each student is assigned to a faculty adviser by the program director. A preliminary course of study is developed in consultation with the adviser.
2. Upon satisfactory completion of 9 credits of coursework and not later than six months prior to the completion of the comprehensive examinations, an advisory committee consisting of at least three members is appointed by the program director.
3. A program of study is prepared by the advisory committee in consultation with the student. The student's program is recommended to the program director; after approval, copies are distributed to the student, adviser, program director, and dean of Graduate Studies.
4. In some programs the student may be required to pass a preliminary examination.
5. Foreign language examinations, if required, must be passed before the comprehensive examination. Notice of passing of the examination is sent to the dean of Graduate Studies.
6. The comprehensive examinations are scheduled and administered in accordance with established rules of the program. The results of the examination are sent to the dean of Graduate Studies.
7. After the student has passed the comprehensive and foreign language examinations, and after identification of a dissertation research problem, a dissertation committee, consisting of the dissertation adviser and a minimum of three and a maximum of five additional faculty from the doctoral program, is recommended by the program director. This committee is selected with regard to both faculty skills and knowledge required by the research problem and the regulations of the specific academic program and the University. The chair of the dissertation committee and the Graduate Office representative must be regular, full-time PSU faculty, tenured or tenure-track, assistant professor or higher in rank; the other three committee members may include adjunct faculty. If it is necessary to go off-campus for one additional committee member with specific expertise not available among PSU faculty, a CV for that proposed member must be presented. All committee members must have doctoral degrees. The adviser submits one copy of the Appointment of Final Oral Examination Committee (GO-16D) to the Office of Graduate Studies for

appointment of the representative of the Office of Graduate Studies and approval of the committee by the dean of Graduate Studies. The dissertation topic must accompany this request, along with a copy of the preliminary draft for approval from the Human Subjects Research Review Committee. No proposal defense shall be valid without a dissertation committee approved by the Office of Graduate Studies.

8. The student prepares a written dissertation proposal and submits it to the approved dissertation committee for evaluation, modification, and final approval. When the dissertation committee has approved the proposal, the student revises the HS draft and submits it to the HSRRC office (111 Cramer Hall) for approval. The doctoral program recommends the student for advancement to candidacy once HS approval has been granted. If the student has not satisfied the residency requirements, a plan for doctoral residency compliance must also accompany the request for candidacy.
9. The student is informed by the dean of Graduate Studies of advancement to candidacy for the doctoral degree. The candidate has a minimum of four months and a maximum of five years from the effective date of advancement to candidacy to complete all requirements for graduation, including defense of the dissertation and its final acceptance by the Office of Graduate Studies. Candidates must be continuously enrolled during that period.
10. Doctoral residency requirement: Each doctoral student must register for and successfully complete 9 or more graded graduate credits per term for a minimum of three consecutive terms after admission to the doctoral program. Summer term may be included (i.e., spring, summer, fall 2006) or excluded (i.e., spring 2006, fall 2006, winter 2007) in calculating consecutive terms.

CANDIDACY FOR THE DEGREE

1. Ph.D. students must register for a minimum of 27 hours of dissertation (603) credits before graduation; Ed.D. students must register for a minimum of 18 hours of dissertation (603) credits before graduation. A minimum continuing enrollment of one graduate credit is required through the term student graduates. Doctoral programs may set higher minimums.
2. Under direction of the chair of the dissertation committee, and in consultation with the members of the dissertation committee, the candidate prepares a preliminary draft of the dissertation. The draft is revised and corrected as directed by the dissertation committee until it meets the approval of the committee.
3. The candidate files the Application for the Degree form with the Office of Graduate Studies

no later than the first week of the anticipated term of graduation.

4. At least two weeks prior to the final oral examination (dissertation defense), the chair of the dissertation committee submits copies of the final draft to each member of the committee.
5. The final oral examination must be passed and all degree requirements completed no later than five calendar years after advancement to candidacy for the doctoral degree. Candidates must be continuously enrolled.
6. Three copies of the dissertation and four copies of the abstract in final approved form (some departments require four copies of the dissertation and five copies of the abstract) must be submitted to the Office of Graduate Studies no later than three weeks before graduation. Required corrections must be made before graduation. Deadlines for each term are available in the Office of Graduate Studies.
7. Microfilming of the dissertation is mandatory for doctoral candidates. An abstract, which may not exceed 350 words, must be submitted to the Office of Graduate Studies with the University Microfilms International agreement form. The charge for this service is \$55, payable at the Cashier's Office, after picking up the necessary forms in the Office of Graduate Studies. Copyrighting of the dissertation is optional, at an additional charge of \$45, payable at the Cashier's Office.
8. The National Research Council Survey of Earned Doctorates must be completed by the student and returned to the Office of Graduate Studies. There is no charge involved.
9. Incomplete or In Progress grades in any course (excluding dissertation, see 11 below) which is in the approved program must be removed no later than two weeks before graduation.
10. All M (Missing) grades in PSU graduate courses that could potentially be letter graded must be removed no later than two weeks before graduation, even if the courses are not listed on the student's approved doctoral program of study.
11. The doctoral program completes the Recommendation for the Degree form (GO-17D) which is forwarded to the Office of Graduate Studies no later than the last week of the term of graduation. In-progress grades for 603 dissertation credits are changed on this form, eliminating the need for the Supplemental Grade Report for these courses.
12. The dean of Graduate Studies certifies that all requirements for the degree have been met and recommends the awarding of the degree.
13. Graduation.

Key to course descriptions



Art 489/589 Metal Sculpture (3)

Bronze or aluminum sculpture cast by the lost wax process. Welded metal sculpture fabrication using gas, electric, and heliarc welding methods. Experimental materials, methods, and concepts optional, consistent with the facilities and circumstances. Maximum: 12 credits. Prerequisite: 12 credits in elementary sculpture or consent of instructor.



- 1 Course prefix/Subject.** These letters indicate the department or academic unit which offers the course.
- 2 Course numbering system.** Courses throughout the Oregon University System (OUS) are numbered as follows:
- | | |
|---------|---|
| 0-99 | Noncredit courses or credit courses of a remedial, terminal, or semiprofessional nature not applicable toward degree requirements. |
| 100-299 | Courses on the lower-division level. |
| 300-499 | Courses on the upper-division level. |
| 4xx/5xx | Master's level graduate courses which are also offered as courses for undergraduates. |
| 5xx | Graduate courses offered in support of master's degree level instructional programs. Ordinarily employed for units whose majors have access to master's programs or for courses populated by master's students. |
| 5xx/6xx | Graduate courses offered in support of doctoral degree level instructional programs which are also offered as courses for master's level students. |
| 6xx | Graduate courses offered in support of doctoral degree level instructional programs. Ordinarily employed for units whose majors have access to doctorate programs or for courses populated by doctorate students. |
| 7xx | Postbaccalaureate courses which may not be applied toward an academic degree. |
| 8xx | In-service courses with limited application toward advanced degrees and no application toward undergraduate degrees. |
- 3 Course title.** The official title of the course is listed next to the course number. A subtitle may be used as part of an omnibus course title.
- 4 Credits.** The numeral or words in parentheses indicate the number of credits granted for one term of study in a particular course. Where approved departmental combinations of courses are listed together, the first number in parentheses refers to the first course number and so on respectively. Example: Art 373, 374, 375 Creative Sculpture (3, 3, 3).
- 5 Maximum credits.** This designation, which appears in descriptions of activity courses, such as art, music, and physical education, means that students may continue to earn credit in this course for more than one term up to specified limits.
- 6 Prerequisites.** Students are responsible for making sure prerequisites have been met. Prerequisites are automatically enforced in departments at the time of registration. Recommended prerequisites are at the discretion of the instructor.

In addition, the following number system is generally in effect in all OUS institutions: 100 to 110 and 200 to 210 courses are survey or foundation courses in the liberal arts and sciences in the disciplines covered. The following numbered courses are repeating courses (they may be taken for more than one term under the same number), with credit being granted according to the amount of work done: 199/299/399, Special Studies; 401, 501, 601, 801, Research; 402, 502, 602, 802, Independent Study; 403 Honors Thesis; 503 Thesis/603 Dissertation; 404, 504, 604, 804, Cooperative Education/Internship; 405, 505, 605, 805, Reading and Conference; 406, 506, 606, 806, Problems/Projects; 407, 507, 607, 807, Seminar; 408, 508, 608, 808, Workshop; 409, 509, 609, 809, Practicum; and 410, 510, 610, 810, Selected Topics. Other repeating numbers are assigned to activity courses, such as art, music, and physical education. Certain senior level courses are taught concurrently with their graduate-level counterparts. Hence this course may be offered for either graduate or undergraduate credit. (See quarterly Schedule of Classes for specific offering.) In the graduate credit course, additional work appropriate to the graduate level of study will be assigned.

Tuition and fees

(Charges for winter/spring 2006)

Credits	Undergrad Resident	Undergrad Nonresident	Graduate Student Resident	Graduate Student Nonresident
Full-time:				
12	\$1,499.50	\$4,643.50	....	....
9	....	....	\$2,444.50	\$4,001.50
Over-time:				
Each additional credit	93.00	355.00	231.00	404.00
Part-time:				
1*	159.50	159.50	297.50	297.50
2*	270.50	270.50	546.50	546.50
3*	381.50	381.50	795.50	795.50
4*	492.50	492.50	1,044.50	1,044.50
5*	603.50	603.50	1,293.50	1,293.50
6*	714.50	714.50	1,542.50	1,542.50
7*	825.50	825.50	1,791.50	1,791.50
8*	936.50	936.50	2,040.50	2,040.50
9	1,169.50	3,527.50	....	....
10	1,277.50	3,897.50	....	....
11	1,388.50	4,270.50	....	....

Admission is required in order to register for 9 credits or more. Note: The appropriate fee is determined by total credits of registered coursework (credit and audit).

*Tuition for carrying loads of 8 credits or fewer is determined by the level of the course(s) taken. Residency is not considered.

See the quarterly Schedule of Classes for further details and for registration policies that affect carrying load, such as auditors and overloads.

EIGHT HOURS OR LESS

Fees based on the level of course taken.

Total charges include:

Instruction Fees
and

	Building Fee	Incidental Fee	Technology Fee
1	\$23	\$30	\$6
2	\$25	\$40	\$12
3	\$27	\$50	\$18
4	\$29	\$60	\$24
5	\$31	\$70	\$30
6	\$33	\$80	\$36
7	\$35	\$90	\$42
8	\$37	\$100	\$48

UNDERGRADUATE

Total undergraduate charges include:

Instruction Fees:

Health Service Fee (includes basic insurance) at \$122 per quarter; per associated credit hours:

	Building Fee	Incidental Fee	Technology Fee
9	\$39	\$110	\$54
10	\$41	\$117	\$60
11	\$43	\$127	\$66
12+	\$45	\$137	\$72

GRADUATE

Total graduate charges include:

Instruction Fees:

Health Service Fee (includes basic insurance) at \$122 per quarter; Building Fee of \$45, Incidental Fee of \$137, and Technology Fee of \$72.

Resource Fee: Programs in Engineering, Business Administration, and Fine and Performing Arts.

NOTE: Graduate students registering for nine or more hours are assessed graduate-level fees for all credit hours regardless of course level (per state policy).

EXCESS TUITION ASSESSMENT

After the start of the quarter, the timing of some drop and add activity may result in a refund penalty charge which may not be appropriate for the credit load. Complete the Request for Return of Excess Tuition Paid form. This form can be acquired and submitted at the Admissions, Registration and Records window in the Neuberger Hall lobby. (This does not apply to credits in Extended Studies or other self-support courses.) The adjustment will be reflected on the billing statement.

BASIC HEALTH INSURANCE

The nonrefundable basic health insurance will be deducted before calculating the refund amount.

RESOURCE FEES

Resource fees are mandatory enrollment fees. All PSU students are assessed a Technology Fee of \$6.00 per credit hour (maximum \$72). In addition, all students majoring in Fine and Performing Arts, students admitted to School of Business Administration graduate programs and admitted to Maseeh College of Engineering and Computer Science upper-division and graduate-level programs are assessed a resource fee per credit hour (FPA: \$5, max \$50; SBA: \$35, max \$350; MCECS: \$35, max \$350); this is a program specific fee.

POLICY NOTES:

Admission is recommended but not required when registering for eight credits or fewer.

Resource fees apply to programs in engineering and computer science, fine and performing arts, and business administration.

Financial aid is not available to non-admitted students.

Health service and insurance is not available to students registered for fewer than 4 credit hours.

Post-baccalaureate undergraduate students are assessed undergraduate fees.

OVERTIME NOTE:

Overtime enrollment is restricted, see "Overload Approvals" in the Academic Policies section.

Students admitted to the undergraduate School of Business Administration degree programs are assessed a resource fee of \$10.00 per credit hour with the maximum charge being \$100.00.

GRADUATE ASSISTANTS

Graduate Assistants (GAs) are fully admitted graduate students appointed to assistantships while working toward an advanced degree. Appointments must be for at least .15 FTE per quarter. GAs are exempt from the payment of the instruction fee on the first 9 credit hours per quarter. (Employing department will provide a tuition credit.) All GAs must register for a minimum of 9 graduate credits. Hours in excess of 9 per quarter are assessed at \$231 per hour and must be approved by the department head and dean of Graduate Studies. GAs are responsible to pay the Building, Health, Incidental, and Technology Fees, which total \$365.50 (for 9 hrs), and applicable resource fees (e.g., programs in engineering, business administration, and fine and performing arts).

This schedule of tuition and fees is determined by the Oregon State Board of Higher Education. No reduction in the total charge is made to those students who do not intend to use specific resources or services. Fees are subject to change.

Self-support courses have fees that are assessed in addition to any other tuition paid to the University.

Students may access their individual financial account balances on the Web at www.pdx.edu.

University housing

University Housing Office at PSU

The Broadway Building
503-725-4333
www.aux.pdx.edu

HOUSING OPTIONS

PSU offers ten residential facilities on-campus. Units include sleepers, studios, one- and two-bedroom units, as well as a traditional residence hall with a meal plan.

RENTAL LIST

A rental list is available online at www.aux.pdx.edu. It is updated each weekday morning at 9 a.m. You may also visit the Housing Office or call 503-725-4333. Unless you join a tour, sponsored by Admissions, you must complete the application process before making an appointment to see an apartment.

UNIT DEFINITIONS

Sleeper: a single room with shares a community bath.

Studio: an efficiency apartment with its own kitchen and bath.

Bachelor units: furnished rooms that serve as the bedroom/living space with kitchen and bath shared with the adjacent unit.

ADA units: are available in most of the residences. Please consult with the Housing Office.

UTILITIES

PSU Residence Halls include water, electric (exception: West Hall), sewer, trash, and natural gas in their rent. Broadway, Epler, West, and Ondine also include high speed internet and cable television (for a fee), and telephone service.

FINE PRINT

Security deposits, cleaning fees, and other charges vary according to location and are in addition to the rental rate. You may choose between a 12-month contract or a month-to-month contract.

RESIDENCE LIFE

University Housing and Residence Life work together to further the student's personal growth and development. We have two Living Learning Communities (LLC) that explore individual values while encouraging appreciation for interpersonal skills and social responsibility. These contracts are for an academic year.

PSU'S RESIDENTIAL FACILITIES

(Rental rates are reviewed once a year, in July)

RENT
(monthly)

Blackstone

(Built in 1931)

This historic, five-story structure offers 17 sleepers, 14 studios, 20 one-bedroom and six two-bedroom units. It is located on the Park Blocks.

\$277-\$855

Broadway

(Built in 2004)

This environmentally friendly modern building has 383 non-smoking studios, a 24-hour computer lab, and retail outlets at street level.

\$527-\$612

King Albert

(Built in 1931)

This historic building has 64 generously sized studios and is home to The Meetro, an on-campus coffee house.

\$436-\$531

Montgomery Court

(Built in 1916)

Located centrally on campus, this historic building was the first all-women's residence in Portland. Today, it houses the Women's Resource Center, Resident Housing Association, Housing Facilities and a large student lounge. Floors 2-4 are furnished sleeper units that include mini-fridges.

\$351-\$411

Ondine

(Built in 1966)

This landmark building includes recently renovated lounge space and a residential restaurant. Floors 8-15 include kitchenettes.

\$410-\$440

ONDINE: FIRST YEAR EXPERIENCE

The First Year Experience is a Living Learning Community (LLC) that offers social and academic programming, along with a meal plan.

\$6,922 pp
(academic year contract)

Parkway

(Built in 1932)

This historic building is a five story structure, also located on the Park Blocks. It offers 13 sleepers, 10 studios, 24 one-bedroom and seven two-bedroom units. Sleepers share a community kitchen.

\$348-\$857

St. Helens

(Built in 1928)

This residence facility is directly across from the King Albert. It includes one sleeper, 35 studios, and 15 one-bedroom units.

\$405-\$673

Stephen Epler \$415-\$607

(Built in 2003)

This modern, environmentally friendly building is made up of 130 non-smoking studios. The first level contains classrooms and office space.

Stephen Epler: Global Village LLC

This dynamic Living Learning community is located on the sixth floor. Students from around the world share an interest in community involvement and leadership.

\$3,685 pp to
\$5,479 pp
(academic year contract)

Stratford

(Built in 1927)

This historic building includes 21 studios and ten one-bedroom units.

\$471-\$623

West Hall

(Built in 1986)

This nine story, L-shaped building offers 189 one-bedroom units.

\$642-\$663

Welcome to Portland State University

Portland State University is at the center of a dynamic community. Almost 60 percent of Oregonians live within commuting distance of the campus and the population of greater Portland has grown to nearly two million people. With its excellent parks, cultural facilities, transportation systems, and cityscape, Portland is one of the finest cities in the United States. As Oregon's economic and population center, and as a gateway to the Pacific Rim, Portland offers unique opportunities for business, industry, government, and the University to enhance partnerships that promote economic, social, cultural, and international development.

The University's mission is to enhance the intellectual, social, cultural, and economic qualities of urban life by providing access throughout the life span to a quality liberal education for undergraduates and to an appropriate array of professional and graduate programs especially relevant to metropolitan areas. The University conducts research and community service that support a high quality educational environment and reflect issues important to the region. It actively promotes the development of a network of educational institutions to serve the community.

Presidents who have served the University are John F. Cramer, 1955 to 1958; Branford P. Millar, 1959 to 1968; Gregory B. Wolfe, 1968 to 1974; Joseph C. Blumel, 1974 to 1986; Natale A. Sicuro, 1986 to 1988; Roger N. Edgington (interim president) 1988 to 1990; and Judith A. Ramaley, 1990-1997. Daniel O. Bernstine took office August 1, 1997.

Campus

Occupying 47 buildings in a 49-acre area, the campus is built around the Park Blocks, a greenway area reserved for pedestrians and bicyclists. The Park Blocks are well used by PSU students. Landscaped to combine utility with natural beauty, they provide a place for students and the community to gather, talk, study, or put on an impromptu concert or lecture.

Elevated walkways connect many of the buildings, bridging city streets and providing fast, easy routes for busy students. An underground tunnel network serves the same purpose and contains shops, game rooms, and eating places.

At the edge of campus, the University merges easily into downtown Portland. The areas immediately surrounding the campus contain private student housing, shops, taverns, convenience stores, dry cleaners, theaters, and restaurants which primarily serve the University.

Commercial and governmental centers, as well as cultural and entertainment resources, are within easy walking distance of campus. Among them are the Oregon History Center, Performing Arts Center, Portland Art Museum, Multnomah County Library, Portland Center with its noted Lovejoy and Keller fountains, Civic Stadium, Civic Auditorium, theaters, and restaurants.

The campus is located within 90 minutes' driving time of snow-covered Mt. Hood to the east and the famed Oregon coastline to the west.



Faculty

PSU faculty members are engaged in teaching, research, and related academic work. Many also put their expertise to work in community affairs, consulting with local business concerns, holding key assignments in professional, cultural, and civic groups, working cooperatively with social agencies, or otherwise serving the community.

Faculty members come from colleges and universities throughout the United States and from foreign countries. The faculty includes over 650 full-time and several hundred part-time members. More than 81 percent of the full-time faculty have doctoral degrees. Many of the part-time members from the community lecture in specialized courses while actively involved in their professions. The faculty is supported by about 600 non-teaching administrative, office, and technical personnel.

Accreditation

Portland State University is accredited by the Northwest Commission on Colleges and Universities, the official accrediting agency for the region.

Various schools and departments within the University also are accredited by spe-

cial agencies. The undergraduate and graduate programs and the accounting program of the School of Business Administration are accredited by The Association to Advance Collegiate Schools of Business International. The Graduate School of Education teacher education programs are accredited by the National Council for Accreditation of Teacher Education and by the Oregon Teacher Standards and Practices Commission. The counseling program is accredited by the Council for Accreditation of Counseling and Related Educational Programs.

The Graduate School of Social Work program is accredited by the Council on Social Work Education. The Maseeh College of Engineering and Computer Science undergraduate programs in civil, computer, electrical, and mechanical engineering are accredited by the Engineering Accreditation Commission/Accreditation Board for Engineering and Technology. The computer science program is accredited by the Computing Accreditation Commission Accreditation Board for Engineering and Technology.

In the College of Liberal Arts and Sciences, the Department of Communication training program in speech pathology is accredited by the

Education and Training Board, American Board of Examiners, through the American Speech-Language-Hearing Association. The speech and hearing clinics have accreditation in both speech pathology and audiology by the Professional Service Board, American Board of Examiners, in speech pathology and audiology through the American Speech-Language-Hearing Association. The Department of Chemistry is accredited by the American Chemical Society.

In the College of Urban and Public Affairs, the Master of Urban and Regional Planning degree is accredited by the Planning Accreditation Board; the Master of Public Administration degree is accredited by the National Association of Schools of Public Affairs and Administration; and the Master of Public Health degree is accredited by the Council on Education for Public Health.

In the School of Fine and Performing Arts the Department of Music is accredited by the National Association of Schools of Music. Programs in the Department of Art are accredited by the National Association of Schools of Art and Design. Programs in Theater are accredited by the National Association of Schools of Theater.

Tuition, fees, and aid

Tuition and fees

Student status. Entering and continuing students at Portland State University should plan their study programs and work loads with a knowledge of the fee and tuition schedules of the institution. The Oregon State Board of Higher Education reserves the right to change the schedule of tuition and fees without notice. Additionally, certain charges set by the University are also subject to change. However, no change made after a term begins will become effective within that term.

Most laboratory and class materials are included in the tuition and fees payment, but certain classes do require special deposit charges, surcharges, or costs to cover materials. These charges are listed in the *Schedule of Classes*.

A **regular student** is defined as a resident or nonresident undergraduate, post-baccalaureate, or graduate student enrolled for 9 credits or more. A regular student is entitled to use the resources of the University, including the Library, the Health Service, and use of the open recre-

ation areas of the Peter Stott Center. A regular student is also entitled to admission to PSU home athletic events (with the exception of playoff games and social events) and coverage by a basic health insurance plan. No reduction in the total charge is made to those students who do not intend to use specific resources or services. All regular students are required to be currently admitted to the University.

All **part-time students**, admitted and nonadmitted, taking 1 to 8 credits pay tuition and fees according to the level of the course(s) in which they enroll. Courses numbered 499 or below are assessed at the undergraduate rate; courses numbered 500 and above are assessed at the graduate rate. Part-time students are entitled to such services as the University Library, Smith Memorial Student Union, Student Development programs, and use of the open recreation areas of the Peter Stott Center. They are not entitled, however, to incidental fee privileges, such as free admission to most athletic events or subsidized use of the Helen Gordon Child Development Center, or health services or insurance; however,

students taking 4-8 hours may opt to purchase health services and insurance. Residency and admission requirements are waived for students in this category.

All students registered for coursework on or after the first day of the term have a financial obligation in the form of an accounts receivable. The financial obligation is the maximum load enrolled after the start of the term.

All tuition and fees may be paid at the Cashier Windows located in Neuberger Hall lobby, or in accordance with the instructions received with the monthly billing statement. For specific deadlines refer to the appropriate *Schedule of Classes* published each term. Tuition and fees must be paid in full each term; however, students may elect to pay in installments by making a one-third payment at the beginning of the term with the balance due by the term's end (Revolving Charge Account Plan). First-time participants must sign an agreement which is available at the Accounts Receivable office, Neuberger Hall lobby or on the Web at www.pdx.edu.

Tuition and fee schedules/Regular tuition schedule. *Note:* The 2006-2007 tuition and fee schedules have not been set by the Oregon State Board of Higher Education. The charges listed in the chart were effective during the 2005-2006 academic year. Students should consult the tuition and fee listing in the PSU *Schedule of Classes* for up-to-date information and applicable tuition and fees.

Students who enroll incur an accounts receivable obligation and are financially responsible for all classes and credits in which they are registered on or after the first day of the term. All classes dropped are subject to the refund schedule. Students are required to pay for any tuition, fees and charges remaining on their account.

Tuition and fee calculation—8 credits or fewer. Part-time students enrolling in courses numbered 499 or below pay undergraduate tuition and fees. Students enrolling in courses numbered 500 and above pay graduate tuition and fees.

For students enrolling in classes both for undergraduate and graduate credit, the instructional fee for each is combined and added to the single building, technology, and incidental fee to arrive at the total charge.

When courses are added, tuition is calculated upon the difference between the original credit-hour payment and total credits. When credits exceed 8, tuition policy for 9 credits or more applies.

Tuition and fee calculation—9 credits or more. All students taking 9 credits or more are assessed tuition and fees according to their undergraduate/graduate and residency status. The level of courses in which students enroll is immaterial.

Self-support, Extended Studies, and noncredit. Enrollment in these courses may not be combined with regular PSU credit courses for fee calculations. Self-support courses have fees that are assessed in addition to any other tuition paid to the University.

Senior citizen fee schedule. Senior citizens are defined as persons age 65 or older who do not wish to earn course credit. Senior citizens who are Oregon residents are authorized to attend classes on a space-available basis without payment of tuition. Charges for special materials, if any, must be paid.

Incidental and Health Service fee privileges are not provided and the University does not maintain any records of enrollment. The registration receipt may be used to obtain a library card.

Late fees. Late payment fees apply on the last day of the term. A late fee of \$100 is charged the last Saturday of finals week to accounts with unpaid current term tuition.

Resource fee. This fee is a mandatory enrollment fee. All students are assessed a technology fee per credit hour and a student services fee per term. In addition,

students admitted to some academic programs are assessed a program-specific resource fee per credit.

Other special fees. Special fees and fines are subject to change. Up-to-date information on special fees and clarification of charges can be obtained from the Office of Business Affairs, 167 Neuberger Hall, 503-725-3443.

Revolving Charge Account Plan (RCAP). An installment payment option is available (except to students who owe the University money from previous terms or who are receiving financial aid).

Students may elect to pay installments on their account balance. The balance is subject to interest at the rate of 12 percent per annum. First-time participants must sign an agreement which is available at the Accounts Receivable Window, Neuberger Hall lobby or on the Web at www.pdx.edu.

In the event of withdrawal, any refunds due are applied to the outstanding balance, and any remaining balance due remains payable. Failure to pay in full may also result in denial of registration, graduation, and transcripts as well as additional assessment for collection charges and attorney's fees.

Withdrawals and fee refunds. Complete withdrawal or dropping one or more classes can be accomplished before classes begin via Web access with a 100 percent reversal of charges. After classes begin, withdrawals and class drops are accomplished via Web access, or Special Registration Form at the Registration windows in the Neuberger Hall lobby, with the applicable tuition percentage charge remaining due and payable. Refund consideration is automatic; no special request is necessary.

Fees for the purchase of a student health insurance plan are nonrefundable. Refunds of special course fees must be approved by departments. Art, speech, and music special activity course fee refunds are subject to the schedule for complete withdrawal listed on this page.

Complete withdrawal or dropping coursework does not cancel a student's obligation to pay a student loan, balance of Revolving Charge Account Plan (RCAP), or any other financial obligation owed the University. Students with such outstanding obligations will have any refund due them applied against the obligation.

1. **Official withdrawals.** Students receiving financial aid who need to completely withdraw from classes during a term should officially withdraw (see the instructions in the Schedule of Classes). By using the official withdrawal procedures, students will have tuition refunds calculated by the Office of Business Affairs. Students receiving financial aid who completely withdraw up to the 60 percent point of a term, will be identified. Financial aid staff will use the federal Return of Title IV

Funds formula to calculate the percentage of financial aid earned versus the percentage of aid that must be returned to federal aid program accounts. In some cases, the Return of Title IV Funds calculation may take all of a student's tuition refund to repay federal aid accounts. In addition, students may be responsible for repayment of federal financial aid program funds. Funds are returned to the financial aid programs from which they were awarded, starting with the loan programs.

Students who are considering withdrawing from a term, should contact staff in the Office of Admissions, Registration and Records.

2. **Unofficial withdrawals.** Students who stop attending without officially withdrawing from Portland State University are considered to have unofficially withdrawn. Students who unofficially withdraw may receive all X or M grades at the end of a term. A grade of X is defined as no basis for grade or non-attendance. A grade of M designates a missing grade.

Students who receive financial aid for a term and unofficially withdraw are identified at the end of each term. Each student receiving financial aid who has unofficially withdrawn *must provide proof of attendance for the term(s)*. Students who provide proof of attendance may be subject to the Return of Title IV Funds policy. Students who fail to provide proof of attendance will have all financial aid received repaid to federal accounts (including PLUS loans) and a university accounts receivable will be established.

Refund calculations are based on total tuition and fees. Special fees are nonrefundable. Refunds are computed from the date of official withdrawal or drop; they are not based on when attendance in class ceased. Students who are delayed in withdrawal process for reasons beyond their control may petition for an earlier drop date via a Deadline Appeals petition obtained at the Registration window. Allow four to six weeks between withdrawal/ drop and receipt of refund. Action cannot begin until the two-week Add period has passed.

Refund schedule for complete or partial withdrawal

Prior to the second week of the term, students receive a 100 percent refund;
in the second week of the term, students receive a 70 percent refund;
in the third week of the term, students receive a 40 percent refund; and
in the fourth week of the term, students receive a 20 percent refund.

There is no refund after the close of the 28th calendar day following the start of classes. This schedule applies to all students, whether making a complete withdrawal or just reducing hours. The appropriate percentage is applied to the difference between the initial official tuition and fees figure and the figure applicable to the reduced load.

Financial aid

Neuberger Hall Lobby
503-725-3461
e-mail: askfa@pdx.edu
www.pdx.edu/finaid

The professional staff in the Financial Aid Office is ready to help students to determine the level of their financial need and to plan for the most efficient use of their financial resources for education.

Eligibility

To assist the student in financial planning and in determining eligibility for assistance, the following expenses are taken into consideration: tuition and fees, books and supplies, room and board, transportation, child care costs and personal/miscellaneous expenses. Specific allowable student expense budgets are shown at www.pdx.edu/finaid under Understanding & Applying for Financial Aid. Note: All tuition and fee costs are subject to change by the Oregon State Board of Higher Education.

The Financial Aid Office provides needy, qualified students with financial aid in the form of loans, grants, and employment. In order to make the best use of available funds, awards normally consist of a "package" of two or more of these forms of financial aid.

Underlying the awarding of financial aid at PSU is the nationally accepted philosophy that parents are the primary source responsible for helping dependent students to meet educational costs. The amount of the contribution expected from parents is related directly to a family's financial strength as reflected by adjusted gross income, number of dependents, allowable expenses, and assets. Both dependent and independent students also have a responsibility to make a reasonable contribution toward their costs from earnings and savings. Financial aid resources serve to supplement these primary resources. Aid eligibility is determined through a federally established formula.

Students should apply annually using the Free Application for Federal Student Aid (FAFSA). The FAFSA can be filed on-line at www.fafsa.ed.gov. FAFSA forms are available at high schools or at college financial aid offices. PSU's federal school code to be used on the FAFSA is 003216.

Applications for aid. Applications for financial aid must be submitted annually for the academic year and/or summer aid.

Applications are accepted by the Financial Aid Office at any time during the year, with priority given to admitted applicants who submit their FAFSA in January and February and who provide all requested information promptly. It is not necessary to wait for formal admission to the

University before submitting the financial aid application; however, students must be admitted before processing of the application for financial aid will occur.

In order to be eligible to receive state or federal financial aid, students must remain in good academic standing as defined in the University Scholastic Standards Policy, and enroll for the minimum credits specified by their Award Notification. Students also must meet the Satisfactory Academic Progress Policy requirements described below. The student must be in a degree or certificate program and must be a U.S. citizen or be an eligible non-citizen.

Undergraduate students. Undergraduate students may receive consideration for financial assistance through the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (SEOG), Federal Work-Study, and Federal Stafford Loan programs. Full-time Oregon resident students may also be eligible for the Oregon Opportunity Grant and the Oregon University System Supplemental Tuition Grant programs. Parents of students who apply as dependent students may borrow through the Federal PLUS Loan program, described in the Educational Loans section.

Post-baccalaureate students. Post-baccalaureate students may receive consideration for financial assistance through the Federal Stafford Loan programs. Parents of post-baccalaureate students who apply as dependent students may borrow through the Federal PLUS Loan program, described in the Educational Loans section.

Graduate students. Graduate students may receive consideration for financial assistance through the Federal Perkins Loan, Federal Work-Study, and Federal Stafford Loan programs.

International students. International students are not eligible to participate in federal financial aid programs.

Award notification

Applicants will be advised of the decision on their financial aid application by an Award Notification. Award amounts will be displayed on the PSU Web site, and students will accept or decline their aid offer online.

Delivery of aid. Available financial aid will be automatically credited to pay tuition and other PSU charges. Excess financial aid and other refunds are generally disbursed through Higher One using the student's ID card, the PSU OneCard. To ensure timely receipt of refunds, students should activate their PSU OneCard upon receipt of the card and select one of the three disbursement methods: a paper check delivered via U.S. mail, an electronic deposit to an existing bank account, or disbursement to the optional OneAccount, an FDIC insured bank account that allows

students to use their PSU OneCard as a debit card. Students may elect to opt out of the PSU OneCard and obtain an alternate ID card. Students electing this option must renew that election on an annual basis and agree to have all refunds deposited to an existing bank account. There is a fee associated with obtaining an alternate ID card. Federal Work-Study is earned on a monthly basis and paychecks are issued at the end of each month. Students may authorize a direct deposit of their Work-Study pay to their bank account, or pick up their paychecks from the cashier window in Neuberger Hall lobby.

Withdrawals—Official/Unofficial. Please see "Withdrawals and fee refunds" on page 21 for the university policy regarding dropping classes and tuition refunds.

Students who withdraw completely during the term and are receiving Title IV federal financial aid may have a percentage of their aid reversed, based upon a formula prescribed by the U.S. Department of Education. These students will have any unearned portion of their aid charged back to their PSU account, and may owe repayment directly to the U.S. Department of Education of any overpaid Federal grants.

Students receiving state or federal aid who receive all X, M, NP, W, or F grades for a term will be required to provide the Financial Aid Office with proof of attendance. Students who do not submit proof of attendance within the specified period of time are subject to having all of their federal and state funds for that term canceled and returned to the funding source(s).

Award sources

Additional details on the federal aid programs are available in The Student Guide, published annually by the U.S.

Department of Education. Students can also find the Financial Aid Guide at www.pdx.edu/finaid. The Financial Aid Guide gives a detailed explanation of the conditions for receiving aid, student rights and responsibilities, and other information of which aid applicants should be aware.

EDUCATIONAL GRANT PROGRAMS

Federal Pell Grants. This federally funded grant program is designed to provide assistance to eligible undergraduate students. The amount of the grant is determined by the federal government with the University acting as the disbursing agent. Eligibility is based upon financial need.

Federal Supplemental Educational Opportunity Grants. This is a federally funded grant program under which eligible applicants are selected for awards by Portland State University. Eligibility is based upon exceptional financial need and awards are limited to undergraduate students only.

Oregon Opportunity Grants (Oregon residents). All Oregon resident undergraduate students needing financial aid will be considered for the Oregon Opportunity Grant awarded by the Oregon Student Assistance Commission. Awards are based upon financial need. Awards are renewable for 12 terms provided satisfactory academic progress and financial need continue.

Oregon University System Supplemental Tuition Grants. This is a state-funded program that provides tuition assistance to eligible Oregon resident undergraduates.

Athletic grants-in-aid and scholarships. Athletic grants-in-aid and scholarships are administered by the institution's financial aid and athletic departments. Each head coach is responsible for selecting recipients based upon eligibility and athletic ability. The National Collegiate Athletic Association sets forth the eligibility and financial aid requirements for Portland State University men's and women's athletic teams.

Any prospective PSU student should contact the coach of the desired sport about availability of scholarships and the recruiting process. Each coach will then consider the prospective student's athletic ability, eligibility, finances available, and the need of that particular sport. An athletic grant-in-aid request is then submitted to the director of Athletics for award to the prospective student.

EDUCATIONAL LOANS

Federal Perkins Loans. This federally funded loan program is available to undergraduate and graduate students who demonstrate exceptional financial need and who are enrolled at least half time. This is a long-term, low-interest loan for which repayment commences nine months after the student is no longer enrolled on at least a half-time basis.

Federal Family Education Loan Program (FFELP). Loans are available to students and parents of dependent students through the Federal Family Education Loan Program (FFELP). Students can borrow the Stafford Loan and parents borrow the PLUS Loan from various lending institutions. Students must maintain at least half-time enrollment to be eligible for the Stafford or PLUS loan. Student borrowers will select a lender at the time they accept a Stafford Loan. Parent borrowers will select a lender when they complete a request for a PLUS Loan.

FFELP Stafford Loans. Loans are available to PSU students through various lending institutions. Both interest subsidized and unsubsidized loans are available. Subsidized loan eligibility is based upon

the demonstration of financial need.

Repayment begins six months after the student drops below half-time status or leaves the University. The federal government pays the interest on subsidized loans while the student is in school.

Unsubsidized loan eligibility is based upon the difference between the student's cost of attendance and financial aid awarded.

Repayment of interest begins while the student is still enrolled. The federal government does not make interest payments.

Annual loan maximums for both loan types combined are \$2,625 for freshmen; \$3,500 for sophomores; \$5,500 for juniors, seniors, and postbaccalaureates; and \$8,500 for graduate students. Independent students may borrow additional unsubsidized Stafford Loans up to these maximums: \$4,000 for freshmen and sophomores; \$5,000 for juniors, seniors, and postbaccalaureates; and \$10,000 for graduates. The interest rate is 8.25 percent.

FFELP PLUS Loans. These loans are available to the parents of dependent students who wish to borrow funds to supplement their student's other aid. The parent borrower must be a US citizen or permanent resident and must pass a credit check by the lender to be eligible for the loan. The PLUS loan has a fixed interest rate of 8.5 percent. Repayment begins 60 days after the last disbursement of the year. The student must maintain at least half-time enrollment for each term that the PLUS loan is disbursed.

After a student receives their financial aid award notification, the parent may go to the Parents' Page at www.pdx.edu/finaid to submit a PLUS Loan request (or a paper application can be obtained from the Office of Student Financial Aid). The parent needs to complete all needed data elements and indicate the amount of PLUS loan requested, the lender choice, and the payment method desired; the funds can either be delivered to the student or mailed to the parent. The maximum amount a parent can request in a PLUS loan is the student's cost of attendance minus any other financial aid and/or scholarships the student is awarded.

If the PLUS loan is approved, the guarantor will mail a promissory note for the parent to sign. The parent must complete it and return it to them. If the PLUS loan is denied, the parent will receive notification from the guarantor explaining the reason(s), with information about how to dispute the outcome.

Alternative Loans. Students who are not eligible for federal financial aid or who need additional funds to meet educational expenses may wish to apply for a non-fed-

eral alternative loan. Because alternative loans are not guaranteed by the federal government, they must be insured privately. This extra cost is passed on to the borrower in the form of higher fees and interest rates. In addition, the lender will look at a student's credit history as well as other factors to determine if the student is eligible for the loan. A student may be denied by one lender but approved by another lender because of the different ways they interpret applicant information. Students who are not considered "credit worthy" by the lender may be offered the option of finding a credit-worthy co-signer. Eligible students may borrow up to the cost of attendance minus other financial aid, or the annual loan maximum as determined by the lender. Additional information about participating lenders and how to apply is available at the Office of Student Financial Aid or at www.pdx.edu/finaid/alternatives.html.

Short-Term Loans. Short-term loans of up to \$400 are available through the Accounts Receivable Office for educationally related expenses.

FEDERAL WORK-STUDY

The Federal Work-Study Program is a need-based program in which the federal government pays from 50 to 100 percent of student wages and the employer pays the remainder. Work-Study is available to undergraduate and graduate students. Employment opportunities are on-campus and off-campus. On-campus jobs are with nearly every academic and administrative department. Off-campus jobs are with government agencies and non-profit groups; many are community service jobs that involve directly serving the community, while providing good work experience. The America Reads program which tutors young children in public schools is one of these programs. The Career Center lists openings for on-campus and off-campus jobs.

For other student employment opportunities, contact the Student Employment Office within the Career Center, 503-725-4958, 402F University Services Building or visit www.career.pdx.edu.

SCHOLARSHIPS AND AWARDS

Portland State University has a number of scholarships and awards which are administered by individual academic departments, the Scholarship Committee, or special committees developed for specific scholarships. Scholarships generally are awarded on the basis of academic achievement, promise, and financial need. Additional information is available on the Web at www.pdx.edu/finaid. Follow the links for scholarships.

SATISFACTORY ACADEMIC PROGRESS AND FINANCIAL AID

In accordance with the Higher Education Act of 1965, as amended by Congress, Portland State University has established a satisfactory academic progress (SAP) policy for students. Since the Office of Student Financial Aid is committed to assisting student's success in obtaining a university education, we see it as important that students understand the policies and procedures related to this requirement. This policy went into effect fall quarter 2005. The policy covers the below list of financial aid programs listed above.

Federal loans

EVALUATION

Satisfactory academic progress is evaluated at the end of each quarter of enrollment. Students will be considered to be making satisfactory academic progress if they meet all three policy requirements. Failure to comply with any one policy component will result in a loss of financial aid eligibility. This policy will consider all quarters of enrollment whether or not financial aid was received.

The three SAP policy requirements are the Maximum Time Frame Requirement, the Grade Point Average Requirement, and the Rate of Completion Requirement.

MAXIMUM TIME FRAME REQUIREMENT

An undergraduate student may receive financial aid until they have attempted 270 quarter credit hours including transfer credit hours accepted by PSU.

A graduate student may receive financial aid until they have attempted no more than 150 percent of the coursework required for their degree program.

Earned A, B, C, D and P grades are considered completed quarter hours of credit. Audit hours will not be counted in the total number of quarter hours attempted. PSU grades of F, I, IP, NP, W, M and X are not considered completed quarter hours of credit. PSU grades of F, I, IP, NP, W, Y, M and X will be considered in calculating quarter credit hours attempted.

Students who fall into this category are immediately ineligible for financial aid. A student may petition for reinstatement of financial aid based on the guidelines listed in the "Appeal Procedures" section of this policy.

GRADE POINT AVERAGE (GPA) REQUIREMENT

Undergraduate GPA Requirement

An undergraduate student's grade point average will be evaluated after the end of each quarter of enrollment. A student must

maintain a 2.00 cumulative PSU grade point average or higher. If a student's cumulative PSU grade point average falls below 2.00, the student will be placed on financial aid warning until the end of the next quarter of enrollment.

Financial Aid Warning

Students on financial aid warning will remain eligible for financial aid. If a 2.00 cumulative PSU grade point average is not maintained at the end of the next quarter of enrollment, the student will be placed on financial aid probation.

Financial Aid Probation

Students on financial aid probation will remain eligible for financial aid. If a 2.00 cumulative PSU grade point average is not maintained at the end of the next quarter of enrollment, the student is immediately ineligible for financial aid. The student may petition for reinstatement of financial aid based on the guidelines listed in the "Appeal Procedures" section of this policy.

Graduate GPA Requirement

A graduate student's grade point average will be evaluated after the end of each quarter of enrollment. A student must maintain a 3.00 cumulative PSU grade point average or higher. If a student's cumulative PSU grade point average falls below 3.00, the student will be placed on financial aid warning until the end of the next quarter of enrollment.

Financial Aid Warning

Students on financial aid warning will remain eligible for financial aid. If a 3.00 cumulative PSU grade point average is not maintained at the end of the next quarter of enrollment, the student will be placed on financial aid probation.

Financial Aid Probation

Students on financial aid probation will remain eligible for financial aid. If a 3.00 cumulative PSU grade point average is not maintained at the end of the next quarter of enrollment, the student is immediately ineligible for financial aid. The student may petition for reinstatement of financial aid based on the guidelines listed in the "Appeal Procedures" section of this policy.

Failure to maintain the grade point average requirement also has implications regarding academic status. Please see PSU's policies on academic standing. The *Schedule of Classes* and the *PSU Bulletin* cite the minimum GPA students must maintain while enrolled, as well as PSU's policies on academic standing.

Rate of Completion Requirement

A student's rate of completion will be evaluated after each quarter of enrollment. A student must maintain at least a 67 per-

cent PSU completion rate. If a student's PSU completion rate falls below 67 percent, the student will be placed on financial aid warning until the end of the next quarter of enrollment.

Financial Aid Warning

Students on financial aid warning will remain eligible for financial aid. If a 67 percent PSU completion rate is not maintained at the end of the next quarter of enrollment, the student will be placed on financial aid probation.

Financial Aid Probation

Students on financial aid probation will remain eligible for financial aid. If a 67 percent PSU completion rate is not maintained at the end of the next quarter of enrollment, the student is immediately ineligible for financial aid. The student may petition for reinstatement of financial aid based on the guidelines listed in the "Appeal Procedures" section of this policy.

Earned A, B, C, D and P grades are considered completed quarter hours of credit. Audit hours will not be counted in the in the total number of quarter hours attempted. PSU grades of F, I, IP, NP, W, M and X are not considered completed quarter hours of credit. PSU grades of F, I, IP, NP, W, Y, M and X will be considered in calculating quarter credit hours attempted.

Appeal Procedures

Appeals must be submitted in writing to the Office of Student Financial Aid. Petitions are approved on a case-by-case basis. The student must have experienced special circumstances that interfered with the completion of their coursework. Petitions will only be approved under these circumstances.

To file for a petition, a student must complete and submit a satisfactory academic progress petition form and include documentation supporting their claim of special circumstances to the Office of Student Financial Aid.

Upon review, the Office of Student Financial Aid will rule on the student's petition and notify the student in writing about their financial aid eligibility.

Student services

University Housing

University Housing Office

The Broadway Building
503-725-4333
www.aux.pdx.edu

The goal of the University Housing Office is to provide safe and desirable housing for students. A wide variety of living styles are available including furnished sleepers and studios, choices between classic or modern buildings and Living Learning Communities.

Ten on-campus buildings are available to PSU students who are registered for a minimum of 8 credits. Seven near-campus buildings are also available to PSU, PCC, and other students who attend qualified schools. The student can choose the architectural style they prefer, be it a new building or a classic one. There are a total of 2,358 units in various settings, some are along the Park Blocks, and others offer outstanding city and mountain views.

There are many benefits to attending an urban campus. Housing is conveniently accessible to parks, bike paths, the Willamette River, and all of the events and destinations Portland has to offer. Transportation is easy with Tri-Met buses and trains servicing 575 square miles.

The Broadway Building and Stephen Epler Hall are the newest additions to the on-campus housing group. These structures have been awarded for their environmentally friendly construction and sustainability practices. The Broadway Building's 383 studios have a contemporary look. There is ample space in each studio, several lounges in which to study or socialize, and a 24-hour computer lab (Broadway). Stephen Epler Hall has 104 studios similar in floor plan.

Living Learning Communities are a large part of PSU Housing's effort to create a well-rounded educational environment:

- ◆ **The Global Village** is a program located in Stephen Epler Hall that focuses on cultural awareness. Participants are paired with roommates of different cultures. Activities include exploring different international cuisines and traditions.

- ◆ **The First Year Experience** at the Ondine offers freshmen dormitory style rooms with double occupancy. A meal plan is included. This program is an excellent way for freshmen to acclimate to University life while creating friendships that will last a lifetime.

The Residence Life staff is a group of professionals that take an active role in creating activities and attending to each individual need as it arises. Combined with student Resident Assistants, residents have 24-hour access to staff for help with the smallest to the most complicated of issues.

To be eligible for PSU Housing, undergraduate students must register for a minimum of 8 credit hours per term for three out of four successive academic terms or provide documentation that they are working toward an advanced degree. Incoming students are advised to contract for housing three to six months in advance using the contracts available online. The exception is that the classic units (except the Montgomery) are only available on a first come, first serve basis and are only rented by visiting the rental list at the Web site listed above.

Guest rooms are available year-round at University Place. Conference Housing is available during the summer months.

PSU buildings are professionally managed by College Housing Northwest, a property management company established by students in 1966. While managing PSU buildings, CHNW also offers seven near-campus housing options to PSU, PCC, and students of qualified schools. Four of these are classic buildings with unique floor plans and the charm of wood floors and carved entrances. The contemporary Goose Hollow Plaza and Goose Hollow Tower, offer oversized studios, one-bedroom and two-bedrooms apartments. The tower boasts a newly renovated lobby, accent walls, 24-hour fitness center, and one of the most renowned views in the city. All apartments are wired for high speed Internet. Secure, off-street parking is available. A free shuttle service runs to and from campus, from early morning to late night. The Goose Hollow Plaza and Goose Hollow Tower apartments can be rented in advance by visiting the Web site listed above. Furnished internship housing is also available in the summer months.

For more information please contact: University Housing, 503-725-4333; Goose Hollow Plaza/Tower, 503-725-4340; or Conference Housing, 503-725-4336

Child care resources

Helen Gordon Child Development Center

1609 SW 12th Avenue
503-725-3092
www.hgcdc.pdx.edu
cdc@pdx.edu

The Helen Gordon Child Development Center is a University-operated service that provides a quality educational laboratory preschool/extended day program for children two to six years of age. The center is accredited by the National Academy of Early Childhood Programs, a division of the National Association for the Education of Young Children. The center is open from 7:30 a.m. to 5:30 p.m. daily. Children of PSU students, faculty, and staff are eligible for enrollment in the program. Enrollment is based on the date of application.

As a laboratory preschool/extended day program, the center enables students from education, psychology, and related fields to complete course requirements through observation, practicum, or research activities at the center. Interested students should contact the center's office.

ASPSU Children's Center

126 Smith Memorial Student Union
503-725-2273
www.aspsucc.pdx.edu

The Children's Center provides child care for children (ages 3 through 9) of students, staff, and faculty on a part-time, flexibly scheduled basis. This facility is for part-time care, and time may be scheduled in blocks of up to four hours a day with a maximum of 20 hours of care per week. The Children's Center is fully licensed and staffed by professionals. Call 503-725-CARE for information and enrollment procedures.

Student Parent Services

118 Smith Memorial Student Union
503-725-5655
www.sps.pdx.edu

Student Parent Services (SPS) is a resource and referral, networking and educational center designed to help student parents manage their roles and responsibilities as

both parents and students. SPS services include the PSU Child Care Cooperative (a networking service); parent education classes, workshops and materials; and child care information, education and referral. SPS also provides individual consultation. SPS is funded through Incidental Fees and there is no charge for direct services. Student parents can use SPS by calling 503-725-5655 or dropping by the SPS office in room 401D SMSU.

Health resources

Center for Student Health and Counseling

University Center Building
1800 SW 6th Avenue
503-725-2800
Testing: 503-725-5301/
Dental: 503-725-2611
www.shac.pdx.edu

The Center for Student Health and Counseling (SHAC) provides high quality, accessible health and mental health services to students through two primary services: Student Health Service and Counseling and Psychological Services. Each offers a range of services to students taking 9 or more credits during the regular academic year. Students taking 4 to 8 credits may elect to pay the health fee during the first 15 days of each term to be eligible for services. During Summer Session, students taking 5 or more credits are eligible.

Payment of the health fee automatically enrolls students in a basic health insurance plan that provides partial payment for hospitalization, office visits, diagnostic work, ambulance service, surgeries, and pregnancy expenses. An optional supplementary insurance can be purchased to cover major medical care and dependent care.

Students who are not enrolled for Summer Session may purchase basic or basic and extended insurance if the student was eligible the preceding spring term. In addition, if the student plans to return in fall term, he or she may use center services on a fee-for-service basis during the summer term.

Further information about all SHAC programs, including printable insurance claim forms and measles forms, is available at www.shac.pdx.edu.

Student Health Service

askshs@pdx.edu

The Student Health Service is staffed by physicians and nurses who are available for diagnosis, treatment, consultation, and referrals for illnesses and injuries. Women's health care is available for annual gynecological exams, pap smears, family planning counseling, and contraception. Specialized

men's health care is also available. Other services include x-ray, immunizations, and dispensary services to support the comprehensive delivery of primary care.

The Health Service also provides an after-hours nurse advice line for students at 1-800-607-5501.

Dental Services

The PSU Dental Service provides basic dental services at a greatly reduced rate to students enrolled for 9 credits or who are enrolled for 4 to 8 credits and have paid the health fee. Typical services include: exams, x-rays; cleanings; emergency care; fillings; root canals; and extractions. Other services such as crowns and night guards can be provided for a prepaid fee. If the Dental Service is unable to provide the required care, students will be referred to community resources. Fees incurred as a result of those referrals will be the responsibility of the student.

For more information about fees or to make an appointment, visit the Center for Student Health and Counseling or call 503-725-2611.

Counseling and Psychological Services

askcaps@pdx.edu

Counseling and Psychological Services provides assistance to students in the following areas:

- ◆ Crisis counseling
- ◆ Brief individual, couple, or group counseling
- ◆ Psychiatric assessment and treatment
- ◆ Career counseling including testing
- ◆ Screening for learning disabilities
- ◆ Test anxiety
- ◆ Alcohol and other drug use assessment, education, and referral

CAPS also houses the Testing Service which coordinates national tests (LSAT, MCAT, GRE, GMAT) and administers other admissions, aptitude, and specialty tests. The service is available both to PSU students and, in many instances, members of the larger community. There are fees for testing that vary depending on the test.

In addition to the above services, a Health Promotion and Education unit provides health and mental health related programs and activities for PSU students. These include lectures and workshops; the weekly radio program, Shrink Rap; health and mental health related screening programs; an e-mail mental health advice service (shrinkrap@pdx.edu); and consultation services for faculty, students, and staff. Programs are widely advertised across campus.

Employment resources

Career Center

402 University Services Building
503-725-4613
www.career.pdx.edu

The Career Center offers assistance to Portland State University students (who are formally admitted and registered for classes) and alumni. Services and resources include:

- ◆ Individual career counseling.
- ◆ Workshops and individual assistance on career decisions, resume writing, interviewing, and job search strategies.
- ◆ An extensive career library and home page with information on careers, internships, employers, and job-search resources.
- ◆ An on-campus recruiting program in which students interview with employers.
- ◆ PSU CareerConnect, an on-line jobs database, with full-time professional level positions, internships, and part-time jobs for students (both on and off campus).
- ◆ Three annual career days or job fairs: Career Information Day in February, Part-time/Summer Job Fair in April, and Non-Profit Career Fair in October.
- ◆ Peace Corps office.

Workshops are offered regularly to assist students with career decision making, resume writing, interview preparation, and effective job seeking techniques. Individual counseling is available for students seeking assistance with career/major choice, resume writing and graduate school applications. Practice interviews with videotaped feedback may be scheduled.

The Career Center library contains career information as well as information on employers in both the public and private sectors. Also available are employer directories, information concerning employment trends, and job-seeking techniques.

For further information, contact the Career Center or visit the Web site: www.career.pdx.edu.

Student employment

402F University Services Building
503-725-4958
www.career.pdx.edu

Student Employment provides referrals to internships and part-time, temporary, and summer jobs off campus, and on-campus Federal Work-Study or student wage jobs. Many employment opportunities are degree-related and most jobs offer flexible hours, often within walking distance from campus. Referrals may be obtained by using PSU CareerConnect, an online career

and job information service, or by stopping by the Student Employment office during office hours. Check PSU CareerConnect regularly, as job postings and employer interview schedules change daily.

Campus activities

Campus-centered activities, supported by the changing resources of the city, make for dynamic and contemporary choices for the Portland State student. Most students plan their schedules to allow time to take advantage of the numerous opportunities, which may include organized cultural affairs, outdoor activities, or a multitude of other experiences available on campus or in the community. A visit to the Littman Gallery on campus, with its local and traveling exhibits, a lunch hour listening to free-form jazz at a noon concert, a presentation at the Lunchbox Theater, or an impromptu forum in the Park Blocks are among the options open to PSU students.

Opportunities exist for all levels of student involvement at PSU. Below is a sampling of currently active programs and groups. New activities are initiated continuously according to student interests.

Athletics

www.goviks.com
email@goviks.com

The Department of Athletics sponsors 14 intercollegiate varsity athletic programs, six for men and eight for women. Men and women compete in basketball, cross country, and indoor and outdoor track and field. Other men's programs are football and wrestling, while women compete exclusively in golf, soccer, softball, and volleyball.

Portland State is a member of the National Collegiate Athletic Association (NCAA) and competes at the Division I level. The Vikings are a member of the Big Sky Conference in all sports except wrestling, which is in the Pac-10, and softball, which is a member of the Western Athletic Conference (WAC).

Football games are played at PGE Park in downtown Portland. Erv Lind Stadium is the home venue for PSU softball and the Tigard High School Soccer Complex serves as the backdrop for Viking soccer. Home tennis meets are held at the Eastmoreland Racquet Club and track and field events are held at Duniway Park. Indoor sports are played primarily at the Peter W. Stott Center, on campus, with selected events held at the Rose Quarter.

Free admission to all Portland State men's and women's intercollegiate home athletic events, with the exception of play-off games, is accorded to all PSU students who hold a valid ID card. Extra football

reserved tickets are also available prior to each home game.

Music

Many musical organizations contribute to the cultural life of the University community. They include the PSU Piano Recital Series, the Florestan Trio (artists-in-residence at PSU), and Ensemble Viento (faculty woodwind quintet); the PSU Orchestra, Symphonic Band, and Jazz lab bands; University Chorus and Chamber Choir; Opera Workshop; and several chamber groups. Each year they provide a rich experience of music in performance during free noon concerts as well as occasional evening programs for the benefit of music scholarships at the University.

The Music Committee works closely with the Department of Music to present weekly noon concerts. These Tuesday and Thursday programs are free and open to all. They feature exceptional student and professional performers in a variety of solo and ensemble literature. Each Wednesday and Friday at noon the Popular Music Board sponsors free performances by the Northwest's finest rock and jazz musicians and hosts national musical acts as well.

Student rates are available for many other concerts, including those of the Friends of Chamber Music, Portland Symphonic Choir, Oregon Symphony Orchestra, and Portland Opera Association.

In short, music is a vital force at Portland State, providing extensive opportunities for participation to student performers and to all listeners.

Publications

Student publications include the *Vanguard*, the daily student newspaper; the *Rearguard* and *The Spectator*, alternative student press; and *The Portland State University Review*, the campus literary magazine. These publications strive to provide a service to the University community and to provide an opportunity to students to learn about the publications business.

Religious activities

The Campus Christian Ministry represents eight faiths: Baptist, Christian (Disciples of Christ), Episcopal, Lutheran, Methodist, Presbyterian, Roman Catholic, and United Church of Christ. There are also a variety of religious student organizations that invite participation in educational events.

The Center for the Study of Religion (CSR) arranges PSU classes, as well as lectures, symposia, and forums to increase public knowledge and understanding of the religious traditions of the world, while also supporting inter-faith dialogue in the quest for meaning and wisdom.

Special events

Conferences and programs bring noted authors, actors, and political figures to campus to lecture and/or participate in group discussions. These events are organized by students and faculty working together and are open to the entire metropolitan community.

Student committees, often with faculty consultation, plan and present continuing programs in film, poetry, photography, art exhibitions, and music. Student organizations provide a variety of co-curricular services. Film programs feature classics and new forms of expression, showing a caliber of excellence not often seen in popular theaters.

Special committees arrange for such events as foreign language theater and other programs in the performing arts which visit Portland State. PSU students work with representatives of the other Portland-area colleges and universities to bring the finest in cultural events to the community.

Student government— ASPSU

www.aspsu.pdx.edu
aspsu@pdx.edu

All students registered for at least one credit are members of the Associated Students of Portland State University (ASPSU). The ASPSU advocates for students' interests, officially represents students before internal and external bodies, and is the vehicle through which students may participate in the governance of the University. Students may run for office, serving on the Student Senate or as president, vice president, or as a member of the Student Fee Committee. Students may also volunteer to work on specific-issue task forces or be appointed to a University-wide committee to represent the student body.

Student organizations

PSU is home to over 100 student organizations which offer many opportunities for involvement related to students' interest area. Some organizations have existed for many years and receive substantial funding each year. Other organizations develop annually. All recognized organizations can be contacted via the Student Activities and Leadership Programs office.

Honorary, Professional, Social Affiliations

Portland State has chapters of many honorary and professional organizations. Contact the department or school for current information on affiliated chapters.

Theater

Opportunities for extensive performance and production experience are available to students through productions by the Portland State Theater Arts Department. Studio theater, graduate theses, and Playbox Theater (short pieces offered at noon and on weekend evenings) are student-directed.

All students, not just theater arts majors, are invited to audition for any departmental production. Tryouts are announced regularly in the *Vanguard* and on the department's email list.

Faculty boards and committees

Students are encouraged to share in the policy-making processes of the University by becoming members of University boards and committees. Students should contact the Office of Student Affairs which solicits names of interested persons, or ASPSU for more information regarding the nomination process.

Student Affairs

433 Smith Memorial Student Union
503-725-4422
www.pdx.edu/dos
askosa@pdx.edu

The personnel in the Office of Student Affairs provide support and assistance to students in dealing with the administration, faculty, staff, and other students.

The mission of Student Affairs is three-fold: to provide programs that facilitate and enhance student learning through intentionally connecting parts of the student experience into a meaningful whole through collaborative partnerships with faculty and other institutional agents and by bridging organizational boundaries; to enrich and complement student learning by providing opportunities for involvement in meaningful activities within the University community and the larger urban community; and to provide services that facilitate student transition to the University and remove barriers to student success.

Within the unique setting of PSU as the major metropolitan university in Oregon, student service programs, organizations, and activities serve as focal points for student success, personal growth and development, multicultural understanding, community service, and leadership opportunities, as well as support the University's teaching, research, and public service mission.

The vice provost for Student Affairs also serves as the administrator of numerous student services and activities including the

Office of Admissions, Registration and Records, Office of Student Affairs, Career Center, Counseling and Psychological Services, Educational Equity Programs and Services, Information and Academic Support Center, and Student Health Service.

Dean of Students

433 Smith Memorial Student Union
503-725-4422
askosa@pdx.edu
www.pdx.edu/dos

The Office of Student Affairs is a resource for accurate information to navigate almost any issue a student may encounter. The dean of students office is responsible for the following programs and services:

- ◆ Campus Recreation
- ◆ Commencement
- ◆ Graduating Students' Academic Honors Recognition
- ◆ Multicultural Center
- ◆ Residence Life
- ◆ Student Activities and Leadership Programs
- ◆ Student Ambassadors
- ◆ Student Conduct
- ◆ Student Handbook
- ◆ Student Legal and Mediation Services
- ◆ Virtual Viking
- ◆ Women's Resource Center

Commencement

433 Smith Memorial Student Union
503-725-4910
commencement@pdx.edu
www.pdx.edu/commencement

Portland State University has two commencement ceremonies each year: a formal cap and gown ceremony at the end of spring term and an informal (no keynote speaker) ceremony held at the end of summer session.

Spring Ceremony

The Spring Commencement Ceremony is a formal event. More than 2,000 students join the procession at the start of the ceremony. As their names are read each student crosses the stage to receive his/her diploma folders (official diplomas are not available until later in the summer). The ceremony is approximately three-and-a-half hours long and is a ticketed event. Students request tickets when registering to attend the ceremony at www.pdx.edu/commencement.

Summer Ceremony

The Summer Commencement Ceremony is an informal event held in the Park Blocks. The ceremony lasts about one hour. Graduates are encouraged to wear regalia. Students register to attend the ceremony at www.pdx.edu/commencement.

The Difference between Commencement and Graduation

Graduation refers to actually receiving a degree once you have been certified by the University as having met all degree requirements. Upon certification the degree is awarded and noted in the Student Information System so that it displays on your transcript. Graduation certification occurs four to six weeks after your final term grades are posted. Diplomas are printed after the degree certification process is complete.

Commencement is a ceremony. It is an opportunity for you, your family, friends, and the PSU community to celebrate your accomplishment. Except for doctoral students (who must actually be graduated to participate), the commencement ceremony is open to any student who has applied to graduate, notified the Commencement Office that they intend to participate, rented the required regalia, and shown up at the designated time on the day of the ceremony. Participation in commencement does not mean that you have graduated and students do not receive a diploma on that day.

Diploma. Student transcripts (official and unofficial) display PSU degree information once the graduation certification process is complete (four to six weeks after final grades are posted). Note that this is prior to the diploma being prepared. All degree recipients are notified by mail of diploma availability (either by picking it up in the Degree Requirements Office or by having it mailed). Diplomas are usually available at the end of the term following the graduation term.

Student Ambassadors Program

433 Smith Memorial Student Union
503-725-8240
ambassadors@pdx.edu
www.ambassadors.pdx.edu

Student Ambassadors serve as representatives of the University and student body with visiting speakers, educators, and dignitaries, conducting campus tours, acting as liaisons between students, faculty, and administrators, performing volunteer community work, and serving as hosts and hostesses at official functions and VIP events. Ambassadors are selected on the basis of their academic excellence, strong written and communication skills, a commitment to problem solving, their ability to be a positive, productive team member, and demonstration of strong leadership skills within the University setting as well as in the community.

Student Conduct

433 Smith Memorial Student Union
503-725-4422

askosa@pdx.edu

www.pdx.edu/dos/conduct.html

The policies of the University governing the rights, freedoms, responsibilities, and conduct of students are set forth in the *Portland State University Student Conduct Code*, which has been issued by the president under authority of the Administrative Rules of the Oregon State Board of Higher Education. The code governing academic honesty is part of the Student Conduct Code. Students may consult these documents in the Office of Student Affairs, 433 Smith Memorial Student Union or by visiting www.pdx.edu/dos/conduct.html.

Observance of these rules, policies, and procedures helps the University to operate in a climate of free inquiry and expression and assists it in protecting its academic environment and educational purpose.

Academic honesty

Academic honesty is a cornerstone of any meaningful education and a reflection of each student's maturity and integrity. The Student Conduct Code, which applies to all students, prohibits all forms of academic cheating, fraud, and dishonesty. These acts include, but are not limited to, plagiarism, buying and selling of course assignments and research papers, performing academic assignments (including tests and examinations) for other persons, unauthorized disclosure and receipt of academic information, and other practices commonly understood to be academically dishonest.

Campus Recreation

212 Peter Stott Center and 47 Smith Memorial Student Union
503-725-5127

campusrec@pdx.edu

www.campusrec.pdx.edu

Campus Recreation provides recreational sport, exercise, and adventure programs to the Portland State community. The Campus Recreation program includes: aquatics center, circuit and weight rooms, climbing center, GroupX fitness classes and personal training, intramural leagues, outdoor program, and recreation clubs. Subsidized by student-fees, students with valid identification can access most of these programs for free or a very nominal fee. A user fee is required for use of the locker rooms or aquatic center. Recreation hours in the Peter Stott Center where most of the programs take place change quarterly, but are usually in the morning until 9:00 a.m. and after 4:00 p.m.

Residence Life

230 Broadway
503-725-2450

Residence Life staff steward the daily management of housing facilities and fostering a healthy, safe living environment that inspires academic achievement, personal growth, civic leadership and personal responsibility. Residence Life cultivates a rich living-learning environment in collaboration with the approximately 2,000 students who reside in University-owned facilities.

Student Activities and Leadership Programs

119 Smith Memorial Student Union
503-725-4452

leadership@pdx.edu

www.salp.pdx.edu

Our mission is to engage students in leadership, critical thinking, community responsibility, and professional growth by complementing academic learning with out-of-class experience.

Student Activities and Leadership Programs (SALP) provide students with a range of co-curricular opportunities. Students can reflect, learn, incorporate, and apply their student activities experiences into their academic and work environments.

We offer involvement through student organizations, community building through university wide-programming, and leadership development through internships, workshops, and an annual leadership conference.

Student Organizations

Portland State is home to over 100 student organizations which offer many opportunities for involvement related to students' interest area. Recognized student organizations are divided into six major areas: Academic and Honorary, Service and Advocacy, Multicultural, Fine and Performing Arts, Political, and Spiritual. For a complete listing and contact information please contact the Student Activities and Leadership Programs office or visit www.salp.pdx.edu.

Multicultural Center

228 Smith Memorial Student Union
503-725-5342

multicul@pdx.edu

www.culture.pdx.edu

The Multicultural Center (MCC) is a focal place on campus that welcomes all students, faculty, staff, and community members to share in dialogue and activities that further understanding among people

of different cultures. The center offers a program space for events that promote appreciation for cultural diversity and serves as an informal gathering place for all members of the University's extended family. Student organizations, academic units, and community groups collaborate to offer a rich array of educational and cultural activities open to all.

Student Legal and Mediation Services

M340 Smith Memorial Student Union
503-725-4556

slms@pdx.edu

www.pdx.edu/sls

Confidential, professional advice and counseling on a wide range of legal issues is available through Student Legal and Mediation Services. Attorneys and staff provide students with assistance in understanding and dealing with legal problems. The office also maintains a resource file of community agencies and referral services. This office also offers mediation services for students who want an alternative process for resolving disputes in a constructive, non-adversarial atmosphere. The goal is to provide a safe, neutral environment where students can come to resolve conflicts with other students, other members of the Portland State community, or the community at large.

Women's Resource Center

Lower Level of Montgomery Hall
503-725-5672

wrc@pdx.edu

www.wrc.pdx.edu

The center sponsors cultural, social, and academic events and programs. The center is a great place to stop by, check-out the library, find out about resources on campus, discuss current events, study, and meet new people. Volunteers are welcome to work on leadership projects for class credit.

Students are dealing with domestic or sexual violence in their lives or who are supporting someone who is, are welcome to come speak to the Interpersonal Violence Advocate. The advocate is available to speak to students one-on-one about concerns or questions, and support and discussion groups are often offered.

The Returning Women Students program provides support, classes, mentoring, and information to women returning to college after an interruption in their formal education. The program is a resource for women both at the undergraduate and graduate level.

Information and Academic Support Center (IASC)

425 Smith Memorial Student Union
503-725-4005
askiasc@pdx.edu
www.pdx.edu/iasc

The Information and Academic Support Center (IASC) provides educational planning services and referrals to students to aid in the University's advising and retention efforts. Specific components are offered to meet the various needs of students.

Advising and Referral

advising@pdx.edu
www.pdx.edu/iasc/advising.html

Information and Academic Support Center advisers assist students with University, general education (University Studies), and degree (B.A. and B.S.) requirements. All new students, both freshmen and transfer students, should attend a New Student Orientation where they will first learn about the PSU curriculum and meet with academic advisers. Following an orientation, and within their first 24 credits at PSU, all students should plan to see an IASC adviser to assist them in understanding their specific graduation requirements. IASC advisers can help students understand their transfer evaluations and teach them how to run a DARS degree audits. IASC advisers also work with students who have not chosen a major or who want to change their major and with students who are struggling academically (e.g. on academic warning, probation, or dismissal). Students with declared majors are provided appropriate referral to the advising available within the academic department.

Academic Support Program

425 Smith Memorial Student Union
503-725-4005
asp@pdx.edu
www.pdx.edu/iasc/asp.html

The Academic Support Program (ASP) provides identified new and continuing PSU students with additional support, mentoring, and advising to promote their academic success. Services include access to the "College Success" curriculum which addresses the concerns of college students through study skills assistance, mentoring, and referrals to appropriate campus resources. Students who are having academic difficulty and/or who are on academic warning, probation, or dismissal are encouraged to discuss their situation with an IASC adviser to determine eligibility for ASP.

Community College Relations

425 Smith Memorial Student Union
503-725-9546
cctransfer@pdx.edu
www.pdx.edu/iasc/ccr.html

The Community College Relations (CCR) office responds to the needs of students transferring to PSU from community colleges by providing advising and transition assistance. PSU recognizes that transfer students often have unique needs and situations. The office also acts as a liaison for community college personnel, providing information, updates, and assistance in the development of collaborative educational opportunities. CCR advisers provide advising at both Portland State and the local community college campuses.

Co-admission programs, currently in place with Chemeketa, Clackamas, Clark, Clatsop, Mt. Hood, and Portland Community Colleges, help ease the transition from community college to the University. Co-admitted students have access to PSU academic advising, library privileges, and, if qualified, financial aid for both PSU and community college courses. The Transfer Center, located within the CCR office space, provides a variety of resources including schedules and catalogs from the local community colleges as well as a computer for accessing on-line records.

Disability Resource Center

435 Smith Memorial Student Union
503-725-4150, TTY 503-725-6504
drc@pdx.edu
www.pdx.edu/iasc/drc.html

The Disability Resource Center (DRC) was created to help students in reducing attitudinal and physical barriers that might otherwise impede success. Its purpose is to ensure the rights of students with disabilities and to assist the University with meeting its obligations under federal and state statutes.

The DRC serves students with temporary as well as permanent disabilities. Students who have disabilities which impact their ability to function in the classroom and want to use the services offered through the DRC must identify themselves to the DRC office. This is a requirement of the Americans with Disabilities Act (ADA). Accommodations provided for students are determined on a case-by-case basis and depend on the nature of the disability and the documentation provided. For additional information please check our Web site or contact the DRC.

Student Athlete Academic Adviser

224 Peter Stott Center, 503-725-2387

Student athletes coming to PSU will be able to work directly with an adviser to assist

them in academic advising and scheduling. Referral, advocacy, problem solving, and monitoring of progress for those with academic difficulty are also available.

Veterans' Services

425 Smith Memorial Student Union,
503-725-3876
www.pdx.edu/iasc/veterans.html

All veterans applying to Portland State University are encouraged to take advantage of the services and opportunities open to them. Veterans' Services provides extensive academic counseling, and welcomes the opportunity to aid PSU veterans in any University-related problem they may encounter. The Veterans' coordinator welcomes the chance to talk informally with veterans about any aspect of federal veterans' benefits.

Certification for VA Benefits. Veterans intending to use their education and training eligibility at PSU should obtain proper certification forms from the Veterans' Clerk in the Office of Admissions, Registration and Records (503-725-3411). This process should be started at least one month prior to registration.

Some programs at Portland State are approved for the training of veterans under Title 38, U.S. Code, Section 1501 (for disabled veterans), Section 1651 (Veterans' Readjustment Benefits Act of 1966), and Section 1700 (Survivors and Dependents Educational Assistance).

Tutoring. For some veterans, tutorial funds are available. Basic requirements of the program are that the veteran be enrolled for at least 6 credits and be receiving VA educational benefits.

Educational Equity Programs and Services

425 Smith Memorial Student Union,
503-725-4457
www.eeps.pdx.edu

Educational Equity Programs provides services to all students to enhance student academic success through tutoring, skills workshops, and comprehensive support programs. Peer tutorials, facilitated group tutoring, and skills workshops in reading, writing, speaking, math, and study skills are offered through the Skills Enhancement and Tutoring Center. Comprehensive academic support services for specific populations of students are available through programs that receive federal and institutional support. Students from populations traditionally under-represented in higher education, first-generation students, and students from diverse backgrounds may apply to participate in programs that support students from entry into the university through graduation.

This office also administers scholarships for students from diverse backgrounds and provides general advising, advocacy, and counseling for ethnically diverse students. Through its work in the Native American Student and Community Center, it provides a venue for Native American people to help create an educational environment supportive of native students.

Skills Enhancement and Tutoring Center

www.setc.pdx.edu

The Skills Enhancement and Tutoring Center (SETC) coordinates a variety of supportive instructional and tutorial opportunities for students, including:

- ◆ Group tutoring for math and science classes.
- ◆ A peer-tutoring program for Portland State University students who desire supplemental, individualized academic assistance in lower-division courses. Tutoring is available on a drop-in basis and is free to PSU students.
- ◆ Workshops covering writing, reading, speaking, math, and study skills. These workshops are open to any Portland State University student who desires further information and skill development.

These tutorial opportunities are designed to assist students desiring to upgrade their academic skills, as well as students who may be struggling in specific skill areas or with specific classes.

The SETC also offers supervised tutoring experience to students who have a minimum 3.00 GPA in the subject area in which they wish to tutor. Training is provided through special tutor training workshops.

The peer tutoring program helps personalize the university experience, opens channels for cultural exchange, and presents a valuable opportunity for students to become involved in one another's intellectual growth and social development.

Students who need tutorial assistance or who are interested in becoming a tutor are encouraged to contact the Program's staff.

Diversity Scholarship Programs/Portland Teachers Program

www.eeps.pdx.edu/drs.html

Students admitted to PSU who are recipients of the Diversity Scholarships are provided tuition waivers and support services through a special advising component of the Educational Equity Programs and Services unit. Applications are accepted in February for first-time freshmen and transfer or continuing college students with 30 or more college credits. Applications may be accepted throughout the year, depending on the availability of funds.

The recipients receive academic advising, advocacy, priority registration, tutoring, one-on-one counseling, mentoring, and may participate in informational and social group activities. In addition, the students' academic progress is monitored from term-to-term to promote academic success.

Information about the Portland Teachers Program is also available through this office.

Student Support Services, Educational Opportunity Program (SSS/EOP)

**458 Smith Memorial Student Union,
503-725-3815**

www.eop.pdx.edu

SSS/EOP is Portland State University's federally funded academic and personal support services TRIO program for college students. It is designed to provide special assistance to those who have traditionally had limited access to a college education. Specifically, students who are low-income, who have a disability, or whose parents did not graduate from college can receive assistance from SSS/EOP if they have a need for academic support. The program provides counseling, skill development courses, and tutoring that is designed to help the student achieve his or her educational goals.

The program's goal is to provide support services that will facilitate an increase in the retention and graduation rates of program eligible students who, historically, have a higher attrition rate than most students.

Students should consider applying for the Student Support Services/Educational Opportunity Program if they feel they will benefit from the additional academic and personal support the program provides. Only admitted PSU students can apply for participation in SSS/EOP. Applicants will be selected on the basis of their need for the educational services SSS/EOP provides and their desire to fully participate in the program's activities. Once selected, participation is voluntary and determined by the individual needs of the student. Students interested in SSS/EOP are invited to contact the SSS/EOP office. Student Support Services/EOP is a U.S. Department of Education Title IV TRIO program.

Native American Student Services

A professional of American Indian heritage assists students through individual meetings and by providing guidance to several American Indian organizations on campus (the United Indian Students for Higher Education and the campus chapter of the American Indian Science and Engineering Society). The adviser also provides referral to community organizations that serve Native Americans and Alaskan Natives.

NATIVE AMERICAN STUDENT AND COMMUNITY CENTER

710 S.W. Jackson

503-725-9695

www.nativecenter.pdx.edu

The Native American Student and Community Center opened its doors in October 2003. Located at the south end of campus at SW Jackson and SW Broadway, its unique architecture and fine display of artwork by local Native American artists serve as a backdrop for many educational programs and cultural activities sponsored by campus and community groups. Campus communities, both native and non-native, partner with local, regional, and national Native American people to create an educational environment that is supportive of PSU native students and culturally enriching for the entire campus. The Native American/Alaskan Native student organizations, AISES and UISHE, have their office in the center.

Educational Talent Search: Project PLUS Program

219 Shattuck Hall, 503-725-4458

www.ess.pdx.edu/ets

A TRIO Program for students in middle and high school, Project Plus serves over 600 students at Cleveland, Franklin, Jefferson, Benson, Madison and Marshall high schools and Binnsmead, Hosford, Kellogg, Lane, Ockley-Green, and Tubman middle schools in the Portland Public School District. The program also provides services to students at Century, Glencoe, Liberty and Hillsboro high schools and Poynter and Thomas middle schools in the Hillsboro School District. The program is designed to increase the number of first-generation and income disadvantaged students continuing in, and graduating from, middle and secondary schools. It seeks to increase the number of these students enrolling in postsecondary education. Students in Project PLUS will have access to free services provided by professional role models and educational advisers in the areas of motivation, career and college information, leadership skills, technology skills, mentoring, and tutoring as needed. Students are assisted with the preparation of forms for college admissions and financial aid.

Roland E. McNair Scholars Program

**M302 Smith Memorial Student Union
503-725-9740**

The Roland E. McNair Scholars Program at Portland State University works with students who want to pursue PhDs. It introduces juniors and seniors who are first generation and low-income or members of under-represented groups to academic

research and to effective preparation and strategies for getting into and graduating from PhD programs. The McNair Scholars Program has academic-year activities and a full-time summer research internship. Scholars take academic and skills-building seminars and workshops during the year, and each scholar works closely with a faculty mentor on original research in the summer. Scholars present their research findings at the McNair Summer Symposium and at other conferences, and are encouraged to publish their papers in the McNair Journal and other scholarly publications.

The Ronald E. McNair Post-baccalaureate Achievement Program was established in 1986 by the U.S. Department of Education and named in honor of Challenger Space Shuttle astronaut Dr. Ronald E. McNair.

Upward Bound Program

239 Shattuck Hall,
503-725-4010

www.ess.pdx.edu/ets

The PSU Upward Bound Program supports student academic success in high school and develops the skills and motiva-

tion necessary for entry into post-secondary study among low-income and potential first-generation college students who are enrolled in high school.

To be eligible, students must:

- ◆ Be enrolled in 9th through 11th grade at Franklin, Grant, Jefferson, Madison, Marshall, or Benson High School in Portland.
- ◆ Come from a low-income family in which the parents did not graduate from a four-year college.
- ◆ Be in need of academic assistance.
- ◆ Have a desire to pursue higher education.

PSU's Upward Bound Program offers:

- ◆ Preparation for postsecondary education
- ◆ Assistance from tutors during the academic year; instruction in math, science, and English language
- ◆ Individual and group counseling
- ◆ An intensive six-week nonresidential summer program (one week is a residential Outdoor Learning Lab)
- ◆ Assistance in completing college admissions and financial aid applications
- ◆ Special workshops, field trips and college visits

- ◆ Incentives: stipend checks, awards, bus tickets, high school credit

Student Legal and Mediation Services

401C Smith Memorial Student Union
503-725-4556
www.pdx.edu/sls
legalserv@pdx.edu

Confidential, professional advice and counseling on a wide range of legal issues is available through Student Legal Services. Attorneys and staff provide students with assistance in understanding and dealing with legal problems. The office also maintains a resource file of community agencies and referral services.

This office also offers mediation services for students who want an alternative process for resolving disputes in a constructive, non-adversarial atmosphere. The goal is to provide a safe, neutral environment where students can come to resolve conflicts with other students, other members of the PSU community, or the community at large.

Campus services

More than 23,000 students attend Portland State—each one with a special set of circumstances, concerns, interests, and aims. Finding the right people to answer questions and provide help and support is made easier by organizations and channels set up to respond to the various needs.

Accessibility

www.pdx.edu/transport

Accessibility is the keynote of Portland State: the campus is on the edge of downtown Portland and within the freeway loop.

Tri-Met, the local transit agency, serves the three counties—Multnomah, Washington, and Clackamas—which make up metropolitan Portland. Tri-Met tickets and passes are available at Transportation and Parking Services, the Transportation Center in the Urban Center Building, and at numerous other locations throughout the city. Park and Ride Stations, located throughout the suburban areas, allow commuters to park their cars and ride the bus into the city. The campus is within Fareless Square, a large section of downtown Portland within which bus, light rail, and streetcar travel is free.

Wheelchair and bicycle paths, and parking areas for bicycles, are located through-

out the campus. Automobile parking is provided in permit-only structures, limited short-term meters, and on-street city metered spaces.

The campus also offers special programs for carpools.

For more detailed information on transportation, parking, or securing a permit, inquire at the Transportation and Parking Office, 503-725-3442.

Affirmative Action and Equal Opportunity Office

503-725-4417
www.afm.pdx.edu
afm@pdx.edu

It is the mission of the Affirmative Action and Equal Opportunity Office to: (1) promote a campus environment that supports and celebrates the diversity of the PSU community; (2) ensure a good faith affirmative action effort and equal opportunity in all aspects of employment and education; and (3) ensure fair and equitable treatment for all PSU community members.

To accomplish this mission, the office provides the following services: discrimination complaint investigation and resolu-

tion; campus recruitment facilitation; Affirmative Action Plan development; and workshops, training, and consultations for students, staff, and faculty in employment, educational and diversity-related areas.

For more detailed information about our functions, anti-discrimination policies, and complaint procedures, contact the office by phone at 503-725-4417, TTY 503-725-6503. The Affirmative Action and Equal Opportunity Office is located in 122 Cramer Hall and is open Mondays through Fridays from 8 a.m. to 5 p.m.

Alumni Relations

503-725-4948
1803 SW Park
www.alumni.pdx.edu
psualum@pdx.edu

The Office of Alumni Relations enables Portland State's 100,000 alumni to maintain a strong and continuing relationship with the University. The office is responsible for promoting communication between alumni and the University and for providing services to alumni, such as the Alumni Master Card, the Alumni Benefit Card (ABC), alumni travel, alumni loan consolidation program, and a variety of insurance programs. The ABC card provides graduates access to a variety of bene-

fits and University facilities, including the Library and physical education facilities.

The 30 volunteer members of the Alumni Board of Directors initiate and promote many programs on behalf of the Alumni Association and the University. The board hosts an annual PSU Weekend, which includes a day of seminars, a nationally-known speaker, a pre-football game party, and a variety of other events. The Alumni Board also sponsors an endowed scholarship for children of alumni; oversees an alumni advocates program; selects outstanding alumni award winners; works with student and campus groups; and promotes numerous other activities.

Box Office/Ticketmaster

503-725-3307

The Box Office is located at the Broadway entrance to Smith Memorial Student Union. Tickets are for sale to PSU cultural events and activities, as well as to intercollegiate athletic home events. This office also serves as a Ticketmaster outlet where tickets to most major events and performances occurring in the metropolitan area may be purchased. For further information, please call 503-725-3307, or visit www.aux.pdx.edu/boxoffice.

Campus Public Safety Office

503-725-4407

The Campus Public Safety Office (www.cpsu.pdx.edu) is located adjacent to Shattuck Hall at SW Broadway and College streets. The office is open year-round, 24 hours a day to assist with personal safety, crime prevention, escort services, and limited vehicle services, and to provide general University information. Public safety officers patrol the campus continually to assure a safe and comfortable environment.

Campus Public Safety Report. A copy of Portland State University's annual Public Safety Report is available upon request. This report includes statistics for the three previous years concerning reported crimes that occurred on campus; in certain off-campus buildings or property owned or controlled by PSU; and of crimes which occurred on public property within, or immediately adjacent to and accessible from, the campus. This report also includes institutional policies concerning campus public safety, such as policies concerning alcohol and drug use, crime prevention, the reporting of crimes, sexual assault, and other matters. You can obtain a copy of this report by contacting the PSU Public Safety Office or by accessing the following Web site, <http://www.cpsu.pdx.edu>.

Information Technologies

503-725-4441

www.oit.pdx.edu
help@pdx.edu

The Office of Information Technologies provides support for computing, voice and data communications, multimedia, television, and audiovisual services. The office of the executive director is located in 445 Neuberger Hall. Information Technologies consists of the following areas:

Computing and Networking Services (Shattuck Hall Annex) operates and maintains all centralized computer systems, servers, Web platforms, the campus network, and all external connections including Internet/Internet-2 connections. CNS provides support for the academic and administrative functions of the University, including general and specialized applications and services. CNS Telecom (107 Shattuck Hall) provides the University, including student housing, with telephone services, data connections, cable TV, and support to other Oregon University System (OUS) facilities located in the Portland metropolitan area.

Information Systems (120 Shattuck Hall) develops and supports the campus administrative systems. Systems include the full suite of SCT/Banner software (financial, human resources, student systems), data warehouse, and other Web applications.

User Support Services (Help Desk) (18 Smith Memorial Student Union) provides technical assistance for all faculty, staff, and students in the use of hardware and software. USS can help issue accounts for Internet access and electronic mail. Computer accounts are available to all employees and to currently enrolled students upon request. USS staff also provides support for the technical needs of University labs. For more information, please check <http://www.uss.pdx.edu>.

Instruction and Research Services (18 Smith Memorial Student Union) provides support to faculty and students using technology in teaching, learning, and research. IRS provides support to faculty in developing Web courses, research computing, distributed education technologies, and technical assistance in the development and use of classroom presentations and instructional materials. Classroom technologies are available in over 40 technology classrooms or through check out equipment available in 6 Smith Memorial Student Union. IRS also operates the PSU Distance Learning Center providing televised courses and using on-campus dis-

tance education classrooms and delivery of distance learning presentations.

Student general access computer labs are available to students with a current PSU computer account. Labs are located in the Millar Library and 96 Neuberger Hall. Other microcomputer labs, such as the University Studies Labs, 322 and 324 Cramer Hall, 226 Broadway Building, and the Instructional Computing Center (408C Neuberger) are available for student use when classes are not scheduled. In addition, most schools and colleges operate discipline computer labs. Check your academic departments regarding these labs as needed.

Library resources

503-725-5874

www.pdx.edu/library

The Portland State University Library (Millar Library) is located on the west side of the park blocks, across from Neuberger Hall and adjacent to the Stott Center. More than 1,500,000 volumes and more than 12,000 serial subscriptions are available. Additionally, numerous electronic databases as well as the Library's online catalog are accessible.

Teaching and learning underscore the library's information services. A variety of classes and seminars on library research and information usage are available for students and faculty. Librarians are also available to collaborate with faculty to create customized classes, enhancing the student learning experience.

A Graduate Student Consultation Service is available to provide specialized expertise and assistance for graduate students who need assistance with dissertations, theses, or other major initiatives.

For reference assistance, go to the Research and Learning Center on the second floor (503-725-5874). Professional assistance is available from 8 a.m. to 9:30 p.m. on Monday-Thursday, from 8 a.m. to 5 p.m. on Friday, from 10 a.m. to 7 p.m. on Saturday, and from noon to 9 p.m. on Sunday.

Ask-A-Librarian, an electronic reference service, is also available via the library's Web site.

Books and Reserve materials may be checked out at the Circulation area on the 1st floor. A valid PSU photo identification card or other PSU borrower's card is needed to check out materials. Electronic Reserves are also available via the library's Web site.

The library's hours vary throughout the academic year. Check the library's Web site for current hours or call 503-725-3065.

Ombuds Office

503-725-5901 and 503-725-5902
www.ombuds.pdx.edu

The mission of the Ombuds Office is to ensure that all members of the campus community receive fair and equitable treatment within the University system. The office serves as a confidential, independent, and informal resource to students, faculty, and staff who need assistance in resolving problems and conflicts that may arise. The ombuds considers all sides of a question impartially and assists community members in resolving conflicts, sorting through policy, presenting options, and mediating issues. The Ombuds Office is located in 169 Cramer Hall. Also see www.ombuds.pdx.edu for additional information.

Smith Memorial Student Union

503-725-4522
www.aux.pdx.edu

Smith Union, 1825 SW Broadway, serves as the campus focal point for students, faculty, staff, and the University community. It is a gathering place for students to meet and plan activities, take advantage of recreational and social areas, attend events, seek help or information, or just relax and get food and refreshment.

The Smith Union ballroom and other meeting and conference rooms host a variety of activities, including conferences, lectures, meetings, dances, concerts, and other events involving the University and the metropolitan community. Most campus activities, other than credit classes, are scheduled by the Campus Event Scheduling Office, located in the 116 Smith Memorial Student Union.

Smith Union is home to many student organizations, including Associated Students of Portland State University (ASPSU), student publications, and a variety of other student clubs and boards. It also houses the Student Resource Center, Multicultural Center, the Offices of Student Affairs and Student Activities and Leadership Programs, IASC, disability, legal, and child care.

Smith Union provides diverse services and amenities to enhance campus life—Portland Teacher's Credit Union, Co-Head Salon, Littman and White Galleries, Viking

Bowl and Billiards (including video games), Parkway Commons, and University Market. Parkway Commons, Smith Union's food court, features Starbucks Coffee, Taco Bell, Subway, Noah's Bagels, the Food For Thought Cafe, and others. University Market, located on the ground floor near the SW Montgomery Street entrance, stocks sundries, reading materials, and PSU memorabilia. Smith Union also offers areas for students to study or simply relax and admire the Park Blocks.

Transportation and Parking Services

503-725-3442
www.aux.pdx.edu/transport

Transportation and Parking Services sells faculty, staff, student, and guest parking permits, provides directions, issues University identification cards, and is responsible for the coordination of alternative transportation programs and parking on the PSU campus. Transportation and Parking Services is located in the lobby of Neuberger Hall off SW Broadway between SW Harrison and SW Hall Streets.

The Transportation and Information Center is located in the Urban Plaza off SW Sixth Avenue between SW Mill and SW Montgomery streets. TriMet sales, trip planning services, carsharing, and Portland Streetcar passes and information are available at this location. TriMet, Portland's transit agency, has nine bus stops on campus and Flexcar, Portland's only carsharing company, has eight vehicles on or around campus. Flexcar membership is available to faculty, staff, and students over 21-years-old.

Annual parking permits are available to faculty and staff and term parking permits are available to students and temporary staff. Term parking permits should be reserved in advance approximately four weeks prior to the start of the term. Reservation instructions are listed in each term's *Schedule of Classes* and on our Web site. Transit passes are sold at a discount to current University students and faculty and staff.

Daily parking is available at the University Center Garage off SW Harrison Street between Fifth and Sixth

Avenues and at Parking Structure Three off SW Mill Street between 12th and 13th Avenues. Short-term metered parking is available in University parking structures, lots, and on streets throughout campus.

If you have any questions regarding transportation, parking, and identification please call the office at 503-725-3442 or visit the Web site at <http://www.aux.pdx.edu/transport/>.

University Place

503-221-0140
 310 SW Lincoln

University Place, located at 310 SW Lincoln, provides 8,000 square feet of conference and meeting facilities; 235 guest accommodations; dining at the University Grill for faculty, staff, students, and visitors to campus; and LV's Uptown Jazz Lounge. Please call 503-221-0140 for more information.

Visitor Information Center

1825 SW Broadway,
 503-725-4402

Located in the lobby of Smith Memorial Student Union, the Information Center provides visitors and the campus community with all levels of information from class schedules, building locations, special events, housing, maps, offices, and services. As a student led organization, the Information Center is your one-stop specialty center on virtually all phases of community life at Portland State University. Hours of operation are Monday-Friday, 8 a.m. to 5 p.m.

Resource Hub

Located in the lobby of Smith Memorial Student Union, the Resource Hub provides the campus community with all levels of information from class schedules, building locations, special events, housing, offices, and services. As Portland State University's main information center, the Resource Hub is your one-stop specialty center on virtually all phases of community life at Portland State University. The Resource Hub is also Portland State University's locker rental center, with lockers conveniently located throughout campus. For more information, call 503-725-4402.

School of Extended Studies

Michael Burton, Vice Provost and Executive Director
Extended Studies Building
1633 S.W. Park, 503-725-3276
Registration: 503-725-4832
Accounts Payable/Receivable:
503-725-4819
www.extended.pdx.edu

Portland State University through the School of Extended Studies offers a wide range of continuing education and special learning activities, including the following: off-campus programs and courses for credit, degree completion programs, distance learning courses and programs, courses offered in secondary schools for credit, noncredit community programs, relicensure, certifications, and in-service programs for professionals in a range of fields, workshops, short courses, institutes, and summer programs.

Off-campus and other special educational programs operate through a number of departments across campus, reaching out to locations throughout the metropolitan area, state, region, country, and internationally. Programs use a range of formats, incorporating different degrees of face-to-face, distance delivery, and online participation.

Off-campus and other special educational programs directly support Portland State's presidential initiatives, which focus attention on collaboration and community connections, internationalization, growth, and diversity. The School of Extended Studies, along with outreach conducted by other units on campus, has accomplished hundreds of collaborations and community connections. Improved delivery capacity through a greater number of locations and through online delivery has substantially increased enrollment at Portland State, drawing in students who would not have been able to attend a traditionally scheduled program. Special programs have also increased diversity on campus and the ability for students and faculty to work with diverse populations.

**Continuing Education
 Graduate School of
 Education (CE/ED)**
503-725-4670

Provides credit and noncredit professional development for PreK-12 educators, administrators, and support staff; post sec-

ondary educators and administrators; the broad spectrum of human service professionals (e.g., counselors, social workers, psychologists); and training professionals. Courses and workshops are offered on campus, at a variety of sites throughout the state, online, and by contract on-site in school districts and human service agencies. Offerings include: off-site master's degrees; administrative licensure programs; the added elementary endorsement; part-time GTEP; educational media/librarianship endorsement, licensure and master's; graduate certificates (graduate training in addictions and in marriage and family therapy); and a number of certificate of completion programs (e.g., training and development, instructional technology, e-learning, and differentiated instruction).

CE/ED CENTERS

Early Childhood Training Center (ECTC)—503-725-4815

Provides a certificate of completion in infant toddler mental health, credit and noncredit courses, conferences, workshops, on-site consultation, and technical assistance to individuals and programs serving children age 0-5 and their families.

The Center for Healthy Inclusive Parenting (CHIP)—503-725-5914

Promotes gender inclusive parenting models.

The Center for Student Success—503-725-8150

Provides consultation to school districts on closing the achievement gap; is a collaboration with the Graduate School of Education.

Continuing Education Press **503-725-4891**

www.cep.pdx.edu
 Publisher of the popular *Getty-Dubay Italic Handwriting Series* of books and materials for children, adopted by Portland Public Schools and Beaverton School District, and *Write Now*, widely used in seminars to teach physicians and medical professionals how to write legibly. Other varied titles include the 4th edition of *Getting Funded the Complete Guide to Writing Grant Proposals* by Mary Hall and Susan Howlett, *Working on the Bomb* by Steven Sanger, *The Art of Legal Interpretation* by Constance

Crooker, and *Helping Children Heal from Loss* by Laurie Van Si and Lynn Powers. Most recently, we've begun publishing a series entitled Grantwriting Beyond the Basics by Michael Wells: *Proven Strategies Professionals Use to Make Their Proposals Work, Book 1*, and *Understanding Nonprofit Finances, Book 2*, available March 2006. The next book in the series will cover evaluation for grantwriters and be available in March 2007. Other books available from the Continuing Education Press include *A Guide to Oregon's Math Standards for K-6 and 6-CIM*, and *Successful Lessons for Meeting Oregon's Math Standards*, by the Continuing Education/Graduate School of Education's Center for Student Success.

Distance Learning

503-725-4823

Provides support to Extended Studies and to PSU academic units to design, develop, deliver, and manage distance learning courses and programs. Extends the reach of the University through a variety of distance and online programs such as the Independent Study program and the eMBA (online MBA) program.

PSU EMBA

503-725-4822

Provides course design and delivery, student and faculty support, and program management services to the School of Business Administration to deliver PSU's eMBA to admitted students throughout Oregon and beyond.

PSU'S WASHINGTON COUNTY SITE CAPITAL CENTER

503-725-2148

PSU's location at the Portland Community College Rock Creek campus serves as a training and education center for PSU undergraduate and graduate degrees, certificate of completion programs, on-site customized training, and online degrees.

Extended Campus Programs

Extended Campus Programs extends PSU offerings to four sites, Portland Community College Cascade in North Portland, Portland Community College Rock Creek in Southwest Portland, Mt. Hood Community College in Gresham and Chemeketa Community College in Salem. The Extended Campus Program offers

working adults access to degrees at these four sites in the evening or on weekends or you may earn your degree fully online.

PSU at Cascade 503-978-5301

PSU at Mt. Hood 503-491-7190

PSU at Rock Creek 503-614-7011

PSU Salem 503-315-4281

General information 800-547-8887 x4822

Independent Study

503-725-4865

University and high school credit courses offered through correspondence and online. Start courses anytime and take up to 18 months to finish. Catalog online: www.istudy.pdx.edu or call 503-725-4865

Professional Development Center

503-725-4820

www.pdc.pdx.edu

Programs developed to meet the needs of the business and professional community. The center serves over 5,000 clients from over 600 companies and offers 250 individual courses to private, public, non-profit, and profit entities. Offerings include certificate programs, evening courses, daytime seminars, and customized in-house training. Courses and seminars are taught from a practical perspective and scheduled during times convenient for most working professionals.

Programs include:

- ◆ Business management[†]
- ◆ Contract/customized in-house training
- ◆ Corporate and executive education
- ◆ Human resource management/comprehensive human resource management[†]
- ◆ IT Certification Training[†]
- ◆ Internet Strategy Workshop Series[†]
- ◆ Macromedia Authorized Training[†]
- ◆ Multimedia Professional Program[†]
- ◆ Project management/advanced project management[†]
- ◆ Seminars (business communication and management)
- ◆ Supervision and performance management[†]
- ◆ Tax practitioners institute

Office of International Affairs

Gil Latz, Vice Provost

101 East Hall

503-725-4094

www.intl.pdx.edu

The Office of International Affairs houses Education Abroad, International Student Services, International Faculty Services, International Special Programs, the Institute for Asian Studies, the Middle East Studies Center, and the Waseda-Oregon Transnational Program. It is the former administrative office for the International Studies Bachelor of Arts Program of the College of Liberal Arts and Sciences. Information on International Studies can be found on page 200.

Institute for Asian Studies

Director: Patricia Wetzel

306 East Hall, 503-725-8571

www.ias.pdx.edu

The mission of the Institute is to prepare PSU students for professional careers and leadership roles in Asia-related fields by providing a comprehensive academic program in Asian studies. The institute coordinates Asian studies curriculum across the University and facilitates the development of faculty expertise in their fields of specialization and in related areas. It promotes links between the University and community by sponsoring Asia-related programs and by collaborating with Portland metropolitan area civic organizations in cultural and edu-

cational endeavors. It houses the Center for Japanese Studies (www.cjs.pdx.edu/), which supports research on Japan and the Japanese-American experience and provides a forum for related academic activities and the exchange of ideas through a variety of curricular and outreach programs.

Middle East Studies Center

Director: John Damis

320 East Hall, 503-725-4074

The Middle East Studies Center (MESC) was the first federally supported undergraduate program in the United States for Arabic language and area studies. Dating from 1960, the center's mandate today is to support the academic study of the Middle East at PSU and to provide Oregon's community with information on the peoples, cultures, languages, and religions of the region in an open and objective atmosphere. MESC is one of PSU's oldest and flourishing institutional bridges between the campus—its resources and expertise—and the community. MESC also serves as a regional information center providing support to business, media, and educational institutions throughout the Northwest.

MESC works with and supports PSU's Contemporary Turkish Studies Program and the Harold Schnitzer Family Program in Judaic Studies. Nationally, MESC belongs to Middle East-related organizations that expand opportunities for faculty and students.

Options in Middle East Studies:

- ◆ *Bachelor of Arts degree in international studies* with a concentration in the Middle East.
- ◆ *Middle East Studies Certificate* complements a Bachelor of Science or Arts degree in any other PSU degree program.
- ◆ Minor in Arabic language.
- ◆ Study of Arabic, Hebrew, Persian, and Turkish languages.
- ◆ Study abroad in Egypt, Jordan, Tunisia, and Turkey.

Branford Price Millar Library's largest specialized collection is the substantial Middle East vernacular holdings, a nationally recognized resource owing its existence to the federal Foreign Language and Area Studies Acquisition Program, augmented through private donations over the years. The collection includes a number of rare books and is available to the public through local and Internet online access.

Several scholarships are available to students in support of Middle East language and area studies, including: the Elizabeth Ducey Scholarship Fund, the Patricia and Gary Leiser Scholarship in Middle Eastern Languages, and the Noury Al-Khaledy Scholarship in Arabic Studies.

Community outreach

MESC supports PSU's mission as an urban university with a strong commitment to community outreach, through:

- ◆ Educator workshops on teaching about the Middle East at the precollegiate level

[†] Indicates a certificate of completion offered.

- ◆ Free, public lending library of educational resources housed in the Global and Multicultural Resource center, 121 Sixth Avenue Building
- ◆ Referral of speakers for schools and community groups
- ◆ Sponsorship of public lectures, conferences, and cultural events including concerts, dance performances, films, and art exhibits
- ◆ Collaborating with educational organizations and institutions and community groups on special events and projects

IE₃: Global Internships

207 East Hall, 503-725-8256

The IE₃ Global Internship program, administered by the Oregon University System enables PSU students to acquire international experience for credit as part of their degree.

An IE₃ Global Internship is a supervised, practical, international work experience. Ranging from 10 weeks to nine months of full-time work, the internship integrates academic credit on the home campus with on-the-job experience, allowing students to gain valuable skills while working toward their degrees.

The benefits gained from an international internship are numerous: personal growth, a better understanding of world affairs, competitive advantage in the job market, proficiency in a foreign language, an understanding of foreign cultures, knowledge of professional practices in another country, maturity and confidence, and professional contacts for future career development.

IE₃ offers internships throughout the world in private-sector companies, government agencies, and non-profit organizations. The latest information on available internships can be found on the IE₃ Web site: <http://ie3global.oregonstate.edu>.

International Faculty Services

Director: Dawn L. White
216 East Hall, 503-725-5075

International Faculty Services (IFS)

- ◆ advises faculty and staff regarding the invitation and employment of international faculty in tenure-track and tenured positions requiring H-1B work visas as well as nonresident aliens in other visa categories
- ◆ prepares Labor Certification applications to the U.S. Department of Labor and employment and permanent residence petitions to U.S. Citizenship

and Immigration Services on behalf of international faculty

- ◆ advises international faculty (and their dependents) on regulations and procedures for maintaining legal status, travel, employment authorization, and other issues, and
- ◆ manages the summer International Visiting Professor (IVP) program.

International Student and Scholar Services

Director: Judy Van Dyck
Assistant Director: Christina Luther
101 East Hall, 503-725-4094

International Student and Scholar Services staff work with admitted international students, visiting scholars, and international faculty. The office is a central source of information on the services and programs available to these groups. The office works closely with sponsoring agencies, diplomatic missions, and other government agencies to resolve academic, financial, and immigration issues.

Services and programs offered to international students and scholars include:

- ◆ An intensive orientation program for all incoming international students and faculty.
- ◆ Provision of technical immigration assistance for students, visiting scholars, and faculty.
- ◆ Assistance to various departments at PSU in meeting the legal requirements for employment for visiting scholars and faculty.
- ◆ Participation in the International Cultural Service Program (ICSP) which sponsors cultural presentations by internationals throughout the greater Portland metro area. Students at PSU are invited to apply for this program, and those selected receive a partial tuition credit.
- ◆ Opportunities to live in American homes and visit with American families through a host family network.
- ◆ An English conversation program which promotes both conversation and cross-cultural understanding between international and American students.
- ◆ Sponsorship of a wide variety of educational and social events for international students with University and community groups.
- ◆ Weekly or quarterly workshops on issues affecting internationals, such as insurance, work permission, taxes, etc.
- ◆ A weekly International Coffee Hour open to all PSU students, staff, and faculty.

For information about international student admissions, call the Office of Admissions, International Student Admissions, 503-725-3511.

For information about English as a Second Language (ESL), call the Intensive English Language Program in the Department of Applied Linguistics, 122 East Hall, 503-725-4088.

International Special Programs

Director: Judy Van Dyck
503-724-4878

Provides training and education programs for groups and individuals, custom-designed for specific international groups/agencies/institutions, which draw on resources and expertise of PSU faculty and the Portland community to provide specialized instruction. Past program groups have come from Japan, Korea, Thailand, Taiwan, China, the Philippines, Germany, Romania, republics of the former Soviet Union, and Yemen.

Education Abroad

Director: Ron L. Witzak
101 East Hall, 503-725-4094

The Office of International Affairs sponsors a wide variety of education abroad programs for PSU students year-round. The University administers some of these programs directly, while others are conducted in cooperation with the Oregon University System (OUS), universities offering programs abroad jointly, such as the Northwest Council on Study Abroad (NCSA†), and educational associations such as the Council on International Educational Exchange (CIEE).

The office also seeks to facilitate teaching and other opportunities abroad for faculty and to develop bilateral exchanges with universities abroad which will provide exchange opportunities for both faculty and students.

The University supports a long-standing tradition that study of other cultures and places is an essential component of modern education.

The office houses the Education Abroad Library, which catalogs thousands of opportunities for overseas study. People seeking information on academic programs offered by educational institutions in this country and abroad are welcome to read the materials available in the office.

Advisers in the Office of International Affairs provide guidance and assistance for students who seek to enrich their univer-

†NCSA members: University of Alaska-Anchorage, University of Alaska-Fairbanks, University of Alaska Southeast, Central Washington University, Eastern Oregon University, Oregon State University, University of Oregon, Portland State University, Southern Oregon University, University of Washington, Washington State University, Western Oregon University, Western Washington University.

sity education through education abroad. The University's education abroad opportunities are highlighted in the following sections. Because these programs offer residence credit and home campus registration, participating students who are eligible for financial aid at PSU may apply it, in most cases, to these study programs.

PSU has been working with its own faculty to develop a variety of short-term overseas experiences for students. The length of these programs range from two weeks to five weeks, and they are offered throughout the academic year. PSU faculty members have taken students to the Caribbean, Ghana, Kenya, Nicaragua, Mexico, Italy, Guatemala, and Suriname. As these programs vary from year to year, please contact the Office of International Affairs for more information.

Education Abroad opportunities are subject to change throughout the year. For the most current listing of programs available, please visit our Web site at www.intl.pdx.edu

ARGENTINA: Buenos Aires

Council on International Educational Exchange (CIEE) Program

An advanced social studies program is offered fall and spring semesters at the Universidad de Buenos Aires, the Pontificia Universidad Católica Argentina, and the Argentine branch of the Facultad Latinoamericana de Ciencias Sociales (FLASCO). Students live in homestays or in student residences.

ARGENTINA: Rosario

Northwest Council on Study Abroad (NCSA) Program

Held at the Universidad Nacional de Rosario through the Programa Sur, this study program is designed for beginning and intermediate Spanish language students, and offers additional coursework in history and culture, art and literature, and business. Language courses are taught in Spanish and emphasize speaking and writing skills. All content courses are conducted in English.

AUSTRALIA: Canberra

Northwest Council on Study Abroad (NCSA) Program

This special intensive winter quarter program at the Australian National University allows students to engage in and focus closely on their studies for a short period of time, using Canberra and New South Wales as their reference library. Students will study Australian history and politics; Australian society and environment; and indigenous cultures. Students stay in serviced apartments in Manuka, a delightful section of Canberra known for its diverse shops and fine cafés.

AUSTRALIA: Perth

Council on International Educational Exchange (CIEE) Program

Murdoch University, located in Perth on the southwest coast of Australia, is the site of this program offered fall and spring semesters. Students may enroll in a wide range of course offerings in the liberal arts, sciences, and social sciences. Housing is in university dorms.

AUSTRALIA: Perth

Northwest Council on Study Abroad (NCSA) Program

Curtin University of Technology in Perth is deemed Australia's largest and leading university of science and technology. Courses range from humanities, business, and environmental resources courses to health science, engineering, and computing; all with a strong applied emphasis. The program is open to undergraduate and in some cases graduate students, and it is offered on a semester or academic year basis.

Students live on campus where they can choose from a variety of university-managed residences.

AUSTRALIA: Sydney

Council on International Educational Exchange (CIEE) Program

The University of Sydney and Macquarie University offer a wide variety of academic disciplines to study. Programs range in length from a semester to a full academic year.

AUSTRALIA: Wollongong

Council on International Educational Exchange (CIEE) Program

Environmental sciences and health sciences are the focus of this program held at the University of Wollongong, located south of Sydney on the southeast coast of Australia. The program is offered fall or spring semester or for an academic year. Students are housed in university dormitories or off campus.

AUSTRIA: Vienna

Northwest Council on Study Abroad (NCSA) Program

The beautiful city of Vienna is home to this fall term and spring semester program. In both programs, German language study is an integral component, but the other courses, taught in English, vary. The emphasis fall term is on international business and European studies, while the spring program is more centered on the humanities. Students live with host families and enjoy academic excursions in and outside Vienna.

BELGIUM: Brussels

Council on International Educational Exchange (CIEE) Program

Vesalius College at the Vrije Universiteit Brussel offers courses in French and

Dutch language, business, communications, economics, and international relations. The program is especially well-suited for students with a keen interest in the European Union.

Students can apply for a semester or full academic year. Housing is in student residences or private homes.

BRAZIL: Salvador de Bahia

Council on International Educational Exchange (CIEE) Program

This program has three main objectives: to increase students' oral and written Portuguese language skills, to facilitate students' knowledge of contemporary Brazil and the northeastern region, and to provide students with the opportunity to take numerous courses, especially in the fields of Afro-Brazilian issues, cultural studies, and/or the arts. This is achieved through academic work combined with extensive cultural excursions and exposure to different aspects of life in the Bahian region of Brazil. An intensive language and culture summer program is also offered through the Universidade Federal de Bahia.

BRAZIL: Sao Paulo

Council on International Educational Exchange (CIEE) Program

The Pontificia Universidade Católica de São Paulo is home for this fall or spring semester or academic year program emphasizing acquisition of Portuguese language skills necessary to take courses in Portuguese in a wide range of academic fields. Housing is in boarding houses or shared apartments.

CARIBBEAN: Bonaire

This summer program is designed for students who seek a short-term, intensive science-based academic program in the Caribbean. It is geared to students who wish to study marine life from an interdisciplinary approach with both theoretical and field-based components.

CHILE: Santiago

Council on International Educational Exchange (CIEE) Program

The Universidad de Chile, the Universidad de Santiago, and the Pontificia Universidad Católica de Chile jointly host this program, offered fall and spring semesters with a year-long option. Courses in the liberal arts and social sciences are offered on all campuses. Housing is in private homes with Chilean families.

CHILE: Valdivia

Northwest Council on Study Abroad (NCSA) Program

Held at the Southern University of Chile in Valdivia, this program offers students a cross-cultural learning experience which combines Spanish language training with

integrated academic courses. Valdivia, a city of 140,000 inhabitants, is the center for culture and industry in the region of Los Lagos. Excursions to important cultural and historic sites in the region are part of the program. Students have the option of living with a host family or in a pension (boarding house).

CHILE: Valparaiso

Council on International Educational Exchange (CIEE) Program

This program is designed for students from all academic disciplines who have at least three years of college-level Spanish or the equivalent in advanced Spanish. It is designed for relatively independent students who seek to matriculate in regular university courses at the Universidad Católica de Valparaíso and who have a keen interest in contemporary Chilean coastal city life and society. This program is most appropriate for students who want to take courses in literature, history, environmental studies, oceanography and psychology, although other majors are also offered. Students will live with homestay families.

CHINA: Beijing

Oregon University System (OUS) Program

Intensive study of Chinese language is the focus of this fall semester program held at the Central University for Nationalities. The program also provides the opportunity to learn about minority peoples of China. A three-week excursion to a minority region in China is included. Students live in the Institute's dormitory for foreign students and scholars.

CHINA: Beijing

Council on International Educational Exchange (CIEE) Program

Peking University is host for this program, available fall and spring semester, which offers Chinese language and area studies. Students reside in dormitories on campus. An eight-week summer program focusing on Chinese language is also available.

CHINA: Nanjing

Council on International Educational Exchange (CIEE) Program

Nanjing University hosts this fall and spring semester program, with a year-long option, in which participants study Chinese and area studies. Housing is in dormitories.

CHINA: Shanghai

Council on International Educational Exchange (CIEE) Program

Held at E. China Normal University, this summer program provides participants with Chinese language study and course offerings in international studies. Students stay in the university dormitory.

CHINA: Zhengzhou

This exchange program with Zhengzhou University, PSU's sister university in Henan Province, offers students the chance to study Chinese for fall or spring semester (or both). Located near the Yellow River about 450 miles south of Beijing, Zhengzhou is an industrial city of more than one million. Housing is in the University of Zhengzhou's student dormitory.

COSTA RICA: Monteverde

Council on International Educational Exchange (CIEE) Program

This fall or spring semester program focusing on tropical biology, ecology, and conservation is held at the Monteverde Institute in west central Costa Rica. Students live at a biological station next to a rainforest. During the week prior to exams, participants live with rural Costa Rican families. An eight-week summer program is also offered.

CZECH REPUBLIC: Prague

Council on International Educational Exchange (CIEE) Program

Social science, humanities, and Czech language are offered at Charles University, where students live in dormitories. The program is available fall and spring semesters. A three-week summer business program is also offered.

DENMARK: Copenhagen

Denmark's International Study (DIS) Program

PSU students can study a variety of topics at the University of Copenhagen. Semester and year-long programs are offered in humanities and social sciences, international business, architecture and design, and marine environmental studies. Summer programs in architecture and design and "Europe in Transition" are also available. Courses are taught in English by Danish professors. Participants live with Danish families or in student residence halls.

DENMARK: Copenhagen

Oregon University System (OUS) Program

Students currently enrolled in PSU's Master of Business Administration or undergraduate business program are eligible to apply for a semester at the Copenhagen School of Economics and Business Administration. Participants may choose to live in dormitories or with host families.

DOMINICAN REPUBLIC: Santiago

Council on International Educational Exchange (CIEE) Program

Spanish language and Caribbean area studies are the focus of this program offered fall and spring semesters, with a full-year option. Advanced Spanish language students are enrolled at the Pontificia Universidad Católica Madre y Maestra (PUCMM), a private institution

located in a suburb of Santiago. Lodging is with Dominican families in private homes. The summer program option is designed for students focused on Spanish language, medicine, and health.

DOMINICAN REPUBLIC: Santo Domingo

Council on International Educational Exchange (CIEE) Program

The goals of this program are to provide advanced Spanish language students with a critical appreciation of the Dominican Republic and Hispanic Caribbean and its importance in Latin America, from the perspective of the social sciences and in the context of a developing urban Caribbean setting. Students have the option of taking courses with Dominican students as well. Students are housed with Dominican families.

ECUADOR: Quito

Oregon University System (OUS) Program

Two opportunities exist in Quito. The first is a semester or year-long program, held at the Pontificia Universidad Católica del Ecuador (PUCE), offering courses in Spanish language and Latin American Studies. The courses are designed for foreigners and are taught in Spanish. The second program, offered at the Universidad San Francisco de Quito (USFQ), is available fall term, spring semester, or all year. Designed for students whose Spanish language skills are at the intermediate and advanced levels, the program places students in regular courses with Ecuadorian students. In both programs, lodging is with Ecuadorian host families.

EGYPT: Cairo

Study in the "cradle of civilization" at the American University of Cairo (AUC). Students can take courses in Arab culture and history; Egyptology; Arabic language; environmental science; political science; and development and business. All courses are taught in English and PSU students are integrated into the university by taking courses alongside Egyptian students. This program is available on a semester basis or during the summer, and students are housed in residence halls.

ENGLAND: Please see Great Britain, page 40.

FRANCE: Angers

Northwest Council on Study Abroad (NCSA) Program

The language, culture, and traditions of France are the focus of this term-long program located in western France in the beautiful Loire Valley. Offered every fall, winter, and spring quarter, the program is held in the Centre International d'Etudes Françaises (CIDEF) on the campus of the

Catholic University of the West and features course choices offered in English or French. Housing is with French families. Students interested in summer study at CIDEF have several options in terms of length of study, curriculum, and housing.

FRANCE: Lyon

Oregon University System (OUS) Program

This year-long program is open to qualified students with intermediate or advanced proficiency in French. Students with two years of college-level French may enroll in a language institute at a Lyonnaise university; students with at least three years may enroll in regular university courses at one of four other institutions. Apartments or student dormitories are available for lodging.

FRANCE: Marseille

The Summer Business in Europe Program introduces M.B.A. students and undergraduate business majors to international business at its European roots. Offered in cooperation with the Marseille School of Management-Euromed Marseille, the three-week summer program offers coursework in English taught by PSU and Marseille School of Business professors. The program includes several company visits and regional excursions. Participants stay in an apartment hotel close to the school.

FRANCE: Paris

Council on International Educational Exchange (CIEE) Program

A critical studies program emphasizing literary criticism, film studies, and philosophy is offered fall and spring semesters and academic year at the Paris Center for Critical Studies and the University of Paris III. Students locate their own housing with

help from program staff. The summer program is designed for students with little or no French language background, who seek a broad study of Parisian and French society, focusing on multicultural issues.

FRANCE: Paris

Council on International Educational Exchange (CIEE) Program

The aims of the French Contemporary Studies Program are to enable students to improve their ability to communicate in French through intensive language instruction and interaction with Parisians and to study major events and trends in 20th century French literature, film, history, philosophy, and art history with a focus on Paris. All courses are taught at the CIEE Paris Center. Students locate their own housing with help from program staff.

FRANCE: Poitiers

Oregon University System (OUS) Program

Most students in this year-long program are enrolled at the Institute for Foreigners at the University of Poitiers, studying French language and literature. Regular classes at the University of Poitiers are available to students with sufficient academic preparation. Students may live in dormitories or apartments or with French families.

FRANCE: Rennes

Council on International Educational Exchange (CIEE) Program

Students take classes through the Division for Foreign Students at the University of Haute Bretagne in Rennes, choosing from a variety of academic subjects, mainly in the humanities. Students are housed in French homes or in university residences.

GERMANY: Cologne

Northwest Council on Study Abroad (NCSA) Program

The Cologne program is open to undergraduate students in all fields of study and is ideal for business majors and minors. Undergraduate students enroll for either fall, winter, or spring terms. Courses focus on German language, marketing, finance, management, and European business and civilization. All courses, besides German language, are offered in English, so no previous German language skills are mandatory.

Students attend classes at the Carl Duisberg Centren (CDC), and they are lead on exciting excursions to explore the country's business culture. A central feature of the program is placement as a paying guest with a German host family.

GERMANY: State of Baden-Württemberg

Oregon University System (OUS) Program

In this exchange program with several universities in the German state of Baden-Württemberg, students enroll in cooperating universities including Freiburg, Heidelberg, Hohenheim, Konstanz, Mannheim, Stuttgart, Tübingen, and Ulm. Housing is in university dormitories.

GERMANY: Tübingen

Oregon University System (OUS) Program

A 15-week intensive German language program is offered in the spring to students who have completed two quarters of first-year college level German. The intensive format enables students to complete the first year and the entire second-year sequence in German language. Housing is in university dormitories.

GHANA: Legon

Council on International Educational Exchange (CIEE) Program

Most fields of study are available at the University of Ghana, host of this new program open for fall and spring semester and academic year study. Twi language and area studies are also offered. Housing is in student residences on campus.

GREAT BRITAIN: London

Council on International Educational Exchange (CIEE) Program

Students can study at Goldsmiths College and take courses in art history, anthropology, drama, English, psychology, and sociology. Students with a background in the sciences can study at Imperial College. Course offerings are available in biochemistry, chemical engineering, chemistry, civil and environmental engineering, computing, electrical engineering, earth sciences, fusion, and physics. The University of Westminster offers courses in architecture, business and management, communications, design and media, health care,



international relations, law, tourism, and urban design.

GREAT BRITAIN: London

Northwest Council on Study Abroad (NCSA) Program

Historic London is the setting for this term-long program offered every fall, winter, and spring quarter. Courses in the liberal arts and social sciences are integrated with academic excursions. Students live with British families.

GREECE: Athens

Northwest Council on Study Abroad (NCSA) Program

Courses in modern Greek, history, art history, and political science are featured in this fall and spring quarter program held at the Athens Centre in the heart of Athens. All courses are taught in English, with the exception of modern Greek. Excursions in and around Athens and the Greek Islands complement the coursework. Lodging is in apartments.

HUNGARY: Budapest

Council on International Educational Exchange (CIEE) Program

Budapest Corvinus University is host for this fall and spring semester program, which offers courses in Hungarian language, humanities, and social science. Students live in apartments with other program participants or with Hungarian families.

HUNGARY: Szeged

Students can attend this program fall or spring semester (or both) at Jozsef Attila University in Szeged, Hungary, studying Hungarian language and culture. Classes through the Institute for Foreigners are offered in English, although participants with proficiency in Hungarian may enroll directly in the university, choosing from a wide range of courses within the fields of arts and letters, social science, and science. Student dormitories or shared apartments are housing options for students.

INDIA: Hyderabad

Council on International Educational Exchange (CIEE) Program

The CIEE Study Center provides a rigorous academic experience with the opportunity to gain insights into the challenges that face contemporary India. Courses offered include anthropology, art history, dance, economics, fine arts, geography, Hindi language, history, humanities, and literature. Courses are offered at the University of Hyderabad. Housing is shared rooms in a dormitory setting.

IRELAND: Dublin

Council on International Educational Exchange (CIEE) Program

Students are introduced to the breadth and depth of Irish culture, enabling them to enhance their academic studies through

integrated studies at Dublin City University. The program offers a core course in Irish culture and society, followed by opportunities to study in a variety of disciplines.

Irish homestays are the housing option for students.

IRELAND: Dublin

Northwest Council on Study Abroad (NCSA) Program

This five-week summer program at the University College Dublin (UCD) is open to undergraduate students of all disciplines. Students generally enroll in two courses focusing on Irish history, literature, or media and theatre. Excursions in and around Dublin are an integral part of the program's academic coursework. Students are housed with homestay families.

ITALY: Asolo

As a member of the Consortium of Universities for International Business Studies, PSU offers M.B.A. students an opportunity to study business in a distinctive international environment with a diverse international business culture. Held in the northeastern Italian city of Asolo, about 25 miles north of Venice, the four-week summer program and the spring semester program offers courses taught in English by consortium professors who are recognized leaders in international business education and consulting.

ITALY: Ferrara

Council on International Educational Exchange (CIEE) Program

The aims of this program are to enable students to improve their ability to communicate in Italian through intensive language instruction and to increase students' understanding of social, historic, political, and cultural realities in Italy through English-taught content courses. The University of Ferrara is the host institution for this program. Students are housed in apartments with other students.

ITALY: Macerata

Northwest Council on Study Abroad (NCSA) Program

The lovely hill town of Macerata, located in east central Italy near the Adriatic Sea, is the site of this semester-long program available fall, winter, and spring terms. Participants study Italian language at the University of Macerata and enroll in international studies courses taught in English by Italian professors. Students live with Italian families or in apartments shared with other students.

ITALY: Paderno del Grappa

A new undergraduate business program offered fall and spring semester by the Consortium of Universities for International Business Studies, of which

PSU is a member, gives PSU students a unique opportunity to study abroad while maintaining their graduation timeline. Held at the Consortium's European campus in Paderno del Grappa, north of Venice, the program offers upper-division business courses held in English, along with optional courses in Italian language and culture, and a program of excursions, lectures, and other activities designed to enhance the international business experience.

ITALY: Siena

Northwest Council on Study Abroad (NCSA) Program

Italian language, humanities, and social science are emphasized in this term-long program located in the Tuscan hills of central Italy. Focus of the program is on Italian language, offered at all levels, and other courses taught in English. Lodging is in shared apartments; a limited number of homestays is available.

JAPAN: Osaka

PSU's exchange relationship with Kansai-Gaidai University allows PSU students to study Kansai-Gaidai's Asian Studies Program for a semester or academic year while students from Kansai-Gaidai come to PSU to study business. PSU students at Kansai-Gaidai participate in the university's homestay program, although housing in university dorms can be arranged.

JAPAN: Sapporo

This year-long exchange program with Hokkaido University offers students the opportunity to study Japanese language, politics, culture, economics, science, and technology. Students who participate in this exchange program will gain the unique experience of studying on the northernmost island of Hokkaido. Courses will be taught in English. The program is open to juniors and there is no language requirement. Students will normally live in student dormitories on campus.

JAPAN: Tokyo

Oregon University System (OUS) Program Participants attend Aoyama Gakuin University's School of International Politics, Economics, and Business (SIPEB), studying Japanese language, although other coursework is offered in English. This 10-month program follows the Japanese academic calendar, beginning in April and ending in February. Housing is in university dormitories.

JAPAN: Tokyo

Oregon University System (OUS) Program The 10-month program, beginning in August at Waseda University, offers a variety of courses, taught in English, in liberal arts and social sciences as well as Asian studies. Lodging is with Japanese families.

JAPAN: Tokyo

Council on International Educational Exchange (CIEE) Program

Offered at the Ichigaya campus of Sophia University, this program is designed for students with an interest in Japanese business and economics as well as area studies and Japanese language. Non-language courses are taught in English. Available fall and spring semesters, as well as all year, the program includes company visits, cultural activities, and field trips. Students are housed with Japanese families.

JORDAN: Amman

Council on International Educational Exchange (CIEE) Program

At the University of Jordan in Amman, PSU students can study history, culture, anthropology, political science, economics, Arabic language, art history, and literature. The program is offered on a semester basis, fall and spring.

KOREA: Asan

This direct exchange program between Portland State University and Soonchunhyang University in Asan, Korea, gives students the opportunity to study Korean language and take courses focusing on English as a Second Language, culture and history courses, and area studies, as well as offers the possibility of internships in teaching conversational English. Housing is offered in a shared dormitory with Korean students.

KOREA: Seoul

This direct exchange program between Portland State University and Hanyang University in Seoul, Korea will give students the experience of studying at a Korean university and living in a dynamic city such as Seoul. This exchange program is offered during fall term or winter/spring terms. Students will study Korean language, international relations and trade, regional studies, and the like. No prior knowledge of Korean language is required. Students will live on-campus in dormitories.

KOREA: Seoul

Oregon University System (OUS) Program

Students may study at Yonsei University and/or Ewha University, located within walking distance of each other in Seoul. Classes in the program, offered through the international division at each university, are taught in English. The curriculum includes Korean language and area studies. Housing is in university dormitories, although private arrangements may be made.

KOREA: Ulsan

The University of Ulsan (UOU) and PSU have a direct exchange agreement that enables PSU students to study at one of Korea's top universities and enjoy the lively city of Ulsan. Students are housed in the university dorm and they are able to choose from a wide variety of courses in English. Besides the semester option, UOU also offers a 6-week summer program, which provides an in-depth look into Korean language and culture.

MEXICO: Cuernavaca, Guadalajara, Guaymas, Monterrey

Oregon University System (OUS) Program

Students with two years of college level Spanish may apply to study for a semester or a year at one of three campuses of Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), a private Mexican university program with 27 campuses throughout Mexico. Depending on each participant's interests and Spanish proficiency, studies in Mexican business, Latin American culture, politics, art, and literature are available, offered primarily in Spanish at the beginning and advanced levels. Students with sufficient language proficiency may also enroll in regular university courses. Depending on the campus, housing may be in homestays or residence halls, or privately arranged.

MEXICO: Guanajuato

Council on International Educational Exchange (CIEE) Program

This program is designed to facilitate Spanish language acquisition for elementary-level Spanish speakers in an environment of cultural immersion facilitated by both classroom work and experiential activities. It also provides an excellent introduction to Mexican history, literature, and culture.

Students may enroll for a semester or for the short-term summer program.

MEXICO: Morelia

Northwest Council on Study Abroad (NCSA) Program

Located in the beautiful central highlands of Mexico, Morelia is the capital of the state of Michoacán. Students participating in the Migration Studies program will attend classes at the Universidad Latina de America in Morelia. Migration Studies coursework is specially designed for students seeking hands-on experience in working with Spanish-speaking populations in Mexico and at home in the United States. The program addresses a growing need for an education that prepares students to live and work in bicultural, bilingual communities. Although Spanish language courses form the backbone of studies, they are accompanied each term by

coursework in a variety of disciplines all related to, what we call, Migration Studies. Students are placed either alone or with another student in homestay families throughout Morelia.

THE NETHERLANDS: Amsterdam

Council on International Educational Exchange (CIEE) Program

International relations, social science, and Dutch language are features of this fall semester program held at the University of Amsterdam. Housing is in student residences.

NEW ZEALAND: Dunedin

Northwest Council on Study Abroad (NCSA) Program

The University of Otago is New Zealand's oldest university, founded in 1869. It has an international reputation in the fields of commerce, health sciences, humanities, and science and environment. The program is open to undergraduates and graduate students in some disciplines on a semester or year-long basis.

Apartment housing is available through the accommodations office at the University of Otago.

POLAND: Warsaw

Council on International Educational Exchange (CIEE) Program

Hosted by the Warsaw School of Economics, participants study Polish language, humanities, and social science. The program is offered fall and spring semester. Housing is in dormitories.

RUSSIA: Nizhny Novgorod

This program is a direct exchange program between Portland State University and Nizhny Novgorod Linguistic University. The program runs during fall term or during winter/spring terms. Student participants will study Russian language, area studies, and literature. Four years of Russian language is required for acceptance into this program.

RUSSIA: St. Petersburg

Council on International Educational Exchange (CIEE) Program

The Council offers several options at St. Petersburg State University:

1. Russian language programs offered fall and spring semesters and during the academic year, geared for students at the intermediate and advanced levels of Russian.
2. A summer program emphasizing Russian language study.
3. A Russian Language for Research Program offered fall and spring semester and during the academic year.
4. A summer program emphasizing Russian language for research.
5. A summer program focusing on language and business in Russia.

Housing is with Russian families or in a university dormitory.

SENEGAL: Dakar

Council on International Educational Exchange (CIEE) Program

The program provides opportunities for cultural immersion through living with a Senegalese family and participating in a community service project or internship. Students explore issues such as education, women's roles, traditional ways of life, and the impact of development and globalization from a West African perspective; the program also enables students to acquire foreign language skills in French and Wolof.

SOUTH AFRICA: Cape Town

Council on International Educational Exchange (CIEE) Program

The University of Cape Town is host to a new spring semester or South African academic year (February-December) program. The academic program allows students to pursue academic studies in a number of disciplines while providing first-hand knowledge of contemporary South African life and society.

SPAIN: Alcalá

Council on International Educational Exchange (CIEE) Program

The program goals are to solidify language skills of advanced students of Spanish and to develop an appreciation and understanding of issues relevant to contemporary Spain and its people. The goals are accomplished through daily interaction in the social and academic communities of Alcalá and Madrid, coursework at the University Institute of North American Studies, enrollment in regular Universidad de Alcalá classes, living with Spanish students in university residences or with families, class-related excursions to Madrid and other cultural and linguistic areas of Spain, and many organized university activities with Spanish students.

SPAIN: Alicante

Council on International Educational Exchange (CIEE) Program

Held at the University of Alicante, this fall and spring semester program, with a year-long option, balances language instruction with area studies courses in the history, culture, and economy of Spain, taught in English. In addition, a six-week summer program provides Spanish language study and an introduction to contemporary trends in Spanish culture. In both programs, students live with Spanish families.

SPAIN: Barcelona

Academy of Liberal and BeauX-Arts (ALBA)

Students can spend fall, winter, and/or spring quarters on this international studies program. ALBA also offers a four-week

summer program. Courses are selected each term from such fields as political science, economics, history, sociology, and art history, all taught in English. Spanish language instruction, offered at all levels, is an integral part of the curriculum. Housing is with Spanish families or in residencias.

SPAIN: Barcelona

Council on International Educational Exchange (CIEE) Program

This program offers a liberal arts program as well as a business and culture program through which students learn more about Spain and Europe in general. Courses are offered through the Universidad Pompeu Fabra and the Universidad de Barcelona. A short-term summer option of the busi-

ness and language program is also available. Students are housed with a homestay family.

SPAIN: Madrid

Council on International Educational Exchange (CIEE) Program

This program offers the opportunity for full immersion into the Spanish language and culture for advanced Spanish speakers. Courses are offered through the Universidad Carlos III de Madrid, and students are housed with homestay families to support the immersion experience.

SPAIN: Oviedo

Northwest Council on Study Abroad (NCSA) Program

An intensive Spanish language program offered to students with at least one year



of prior college-level Spanish is available at the University of Oviedo. Located in north central Spain just a few miles from the coast, Oviedo reflects both its pre-Moorish past and elements of European Spain. The program is available fall term, spring semester, and all year. Students in the program live with Spanish families, although housing at the university is an alternative option.

SPAIN: Segovia

Northwest Council on Study Abroad (NCSA) Program

Located 60 miles north of Madrid, Segovia is one of Spain's most beautiful and historically interesting sites, and has been designated a site of global significance by UNESCO. The Segovia program is language and culture specific, offering students fall or spring semesters of 14 weeks and a six-week summer session. The program is designed for students with upper-intermediate and advanced Spanish skills. It is open to undergraduate students in all fields of study, especially Spanish majors with at least sophomore status and good academic standing. A minimum of two college years of Spanish or the equivalent is required for all sessions. A central feature of the Segovia program is placement with a Spanish host(s).

SPAIN: Seville

Council on International Educational Exchange (CIEE) Program

The University of Seville and the Universidad Pablo de Olavide host three CIEE-sponsored programs available fall and spring semesters and for an academic year. Humanities and social sciences are the focus of the Liberal Arts Program, while the Business and Society Program is designed for students specializing in these areas.

A third program at the University of Seville, available fall or spring semester, is designed for intermediate level students of Spanish. This Language and Society program also includes courses in the humanities and social sciences. A short-term summer program in this discipline is also available.

For all programs in Seville, students live in private homes or residencias (boarding houses).

TAIWAN: Kaohsiung

An exchange agreement between PSU and National Sun Yat-Sen University in Kaohsiung offers a unique opportunity for two PSU students to spend a year studying Mandarin Chinese at intermediate and advanced levels. In addition, students may select from courses in Chinese history, culture, and contemporary society which are taught in English. Housing is in residence halls shared with other students.

TAIWAN: Taipei

Council on International Educational Exchange (CIEE) Program

Participants study Chinese language, humanities, economics, and social sciences at National Chengchi University. The program is available fall and spring semesters and academic year.

THAILAND: Chiang Mai

Oregon University System (OUS) Program

Program participants begin their stay in Chiang Mai in October with an orientation session. Classes are offered in the areas of art history, economics, geography, government, history, literature, and philosophy of Thailand and Asia, taught in English by Thai, American, and other international professors. Thai language classes are a required part of the curriculum.

THAILAND: Khon Kaen

Council on International Educational Exchange (CIEE) Program

Two programs are held at Khon Kaen University. The first, held fall semester, offers coursework in Thai language and literature, women's and development studies, and public health. The second is a six-week summer program in Thai language and development studies. Housing for both programs is student dormitories; in addition, semester students have the option of private housing.

TURKEY: Ankara

Council on International Educational Exchange (CIEE) Program

Students can study architecture, biology, chemistry, history, mathematics, philosophy, economics, and a wide variety of liberal arts subjects at either Middle East Technical University (METU) or Bilkent University. Programs are offered on a semester basis and in the summer. An active language study option is also available for students at the Active Turkish Language Centre in Ankara.

VIETNAM: Hanoi

Council on International Educational Exchange (CIEE) Program

Vietnam National University is host of this fall and spring semester program, in which Vietnamese language, civilization, and history are the focus of study. Participants stay in foreign student guest houses or private residences.

Fulbright Program

Adviser: Debra Z. Clemans

Portland State participates in the International Educational Exchange Program authorized by the Fulbright-Hays Act. Awards available include those offered by the U.S. government, foreign governments, universities, and private donors. Grants are available to qualified

graduating seniors and graduate students for advanced research, to qualified faculty for lecturing and research, and to teachers for teacher exchange programs.

Grants for Graduate Study Abroad. Fulbright opportunities are announced annually about May 1, and applications should be prepared as soon as possible. The deadline for submission of application materials to the Fulbright adviser is the last week of September 2005 for the 2006-2007 academic year. The Fulbright program adviser disseminates information about grant opportunities and assists in processing grant applications.

University Lecturing/Advanced Research. The Office of International Education Services provides information to faculty on grants for university lecturing or advanced research. Application deadline is August 1.

Opportunities Abroad for Teachers. The U.S. Department of State sponsors teaching positions abroad and summer seminars for teachers and professors through its Opportunities Abroad for Teachers program. Interested persons should apply by October 15 directly to the U.S. Department of State. Interviews for Oregon-area applicants are arranged by the Fulbright adviser at PSU and are held on campus in December.

National Security Exchange Program (NSEP)

**David L. Boren Scholarships
Adviser: Debra Clemans**

Scholarships to undergraduate and graduate students are available through this federally funded program for the purpose of helping more Americans learn the languages and cultures of countries and regions that are deemed critical to U.S. national security. It aims to build a base of future leaders and professionals who can help the United States make sound decisions and deal effectively with global issues and to enhance and increase the faculty who can educate U.S. citizens toward achievement of these goals. This scholarship includes a service requirement once a student has completed his or her degree. Applications are due during winter term each year. Interviews are held on the PSU campus prior to NSEP deadlines. Those interested should contact the NSEP adviser listed above for more information on requirements and application details.

Undergraduate Admissions and Programs

105 NEUBERGER HALL
PO BOX 751
PORTLAND, OR 97207-0751
503-725-3511
www.pdx.edu

U.S. Citizens and Immigrants (Domestic Applicants)

Application

Domestic students must submit the following information to the Office of Admissions, Registration and Records.

1. Application form and nonrefundable fee. The application may be obtained from the PSU Office of Admissions, Registration and Records and at the counseling offices in most Oregon high schools and community colleges or on-line at <http://www.pdx.edu>. To assure consideration for admission, the application should be submitted by the dates listed on the form and must be accompanied by a non-refundable \$50 application fee[†]. The application and the nonrefundable \$50 application fee are valid for one calendar year.

2. Admission validation. To validate admission, the student must register for classes during the initial term of admission. If the student does not register for this term, the application can be updated to one of the next three consecutive terms without repaying the fee. After this time period the student must submit a new application along with another \$50 fee.

3. Official transcripts. Transcripts must be submitted directly from each high school or college attended. Transfer students who have earned fewer than 30 credits of college transfer coursework are also required to submit official high school transcripts. To be considered "official," transcripts must be received by PSU

in the sealed original envelope from the issuing school. Since all official transcripts submitted become the property of PSU and cannot be copied or returned to the student, students are encouraged to obtain unofficial copies of their transcripts from prior institutions for advising or personal purposes.

4. Official scores of College Board Scholastic Aptitude Test or American College Test. For new freshmen entering PSU directly from high school or who have earned fewer than 30 credits of college transfer work, scores from the College Board Scholastic Aptitude Test (SAT) or American College Test (ACT) are required including the writing composition portion of either the SAT or ACT exam. Portland State requires the writing portion of either ACT or SAT I as part of its admission process beginning in February 2005. The applicant is responsible for seeing that test scores are submitted directly to PSU from the testing board. For more information on these examinations, contact the College Board, 1947 Center Street, Berkeley, CA 94704; The American College Testing Program, Iowa City, IA 52240; or PSU Counseling and Psychological Services, M343 Smith Memorial Student Union, 503-725-4423. Note: Students graduated before 1975 are not required to provide the ACT or SAT.

5. Altered transcripts and falsified applications. Students who knowingly submit altered transcripts or falsified applications jeopardize their admission status and may have their admission rescinded and/or their registration canceled. All records submitted, filed, and accumulated in the Office of Admissions, Registration and Records

[†] Fees subject to change without notice.



become the property of the University. The number of students admitted for any term is subject to the availability of space. When space is limited, selection may be based on grade point average, date of application, intended major, etc.

Admission Requirements— Entering Freshmen

To be admitted as freshmen, students need to fulfill each of the requirements (or alternatives to each) as specified in items 1-4 below.

1. High school graduation requirement.

Must have graduated from a standard or accredited high school. Students who have not graduated from high school or from a standard or accredited high school may meet entry requirements through alternative testing. Alternative testing includes successful completion of the Test of General Education Development (GED) with a minimum overall score of 460 and a minimum score of 410 on each of the five sub-tests (if taken before January 2001, an average score of 46 and a minimum score of 40 on each subject test is required). Students from non-accredited or non-standard high schools, or home-school students may meet the high school graduation requirement with a minimum score of 1,000 on the critical reading and math portions of the Scholastic Aptitude Test (SAT) or 21 on the American College Test (ACT) and an average of 470 or above (940 total) on two College Board SAT Subject Tests (Math Level I or IIc, and one additional subject test of the student's choice). An examination in a second language is strongly recommended to qualify the applicant for admission by meeting the language proficiency requirements. Students who do not take an SAT Subject test in a second language must prove language proficiency through another approved process.

2. Subject requirements. Satisfactorily complete 14 units (one year equal to one unit) of college preparatory work in the subject areas shown below, or submit Oregon Proficiency-based Admission Standards (PASS) scores of M, H, or E.

a. English (4 units). Shall include the study of the English language, literature, speaking and listening, and writing with emphasis on and frequent practice in writing expository prose during all four years.

b. Mathematics (3 units). Shall include second-year algebra and two additional years of college preparatory mathematics such as geometry (deductive or descriptive), advance topics in algebra, trigonometry, analytical geometry, finite mathematics, advanced applications, calculus, probability and statistics, or courses that integrate top-

ics from two or more of these areas. (One unit is highly recommended in the senior year.) Algebra and geometry taken prior to the ninth grade will be accepted.

c. Science (2 units). Shall include a year each in two fields of college preparatory science such as biology, chemistry, physics, or earth and physical science; one recommended as laboratory science.

d. Social studies (3 units). Shall include one year of U.S. history, one year of global studies (world history, geography, etc.), one year of social studies elective (government highly recommended).

e. Second language (2 units). Shall include two years of the same second language or demonstrated proficiency in a second language. See page 7.

Alternatives to the subject requirements. (Any one of the following.)

I. Score an average of 470 or above (1410 total) on the SAT II subject exams (English Composition, Math Level I or IIc, and a third test of the student's choice).

II. Take make-up coursework for specific subject requirements missed in high school and achieve a passing grade. Note: Satisfactory completion of Math 95 or its equivalent (Intermediate Algebra) fulfills in total the subject requirement in mathematics.

3. Grade point average requirement.

High school students with a cumulative grade point average of at least 3.00 in all graded subjects taken toward high school graduation or students who have scored 1000 SAT combined (critical reading and math) or 21 ACT are eligible for admission. Students who do not meet the 3.00 GPA or 1000 SAT/21 ACT requirement may be admitted based on a combination of GPA and test scores. Please see "Alternative means of meeting GPA requirement" on page xxx.

4. Writing Component of SAT/ACT.

Students must take and submit scores for the writing component of the SAT and/or ACT. No minimum score is required.

Admission Requirements— Transfer Students

To be admitted as a transfer student, applicants must have a minimum GPA of 2.25 in 30 quarter credit hours of transferable college work. Applicants who present a transferable associate's degree or an Oregon Transfer Module (OTM) will be admitted with a minimum cumulative GPA of 2.00. Students who have accumulated up to 29 credits of college work must also meet the freshman admission requirements.

Second language proficiency requirement. All students must meet the second language proficiency requirement. See page 7.

Transfer evaluations. A copy of the transfer evaluation is enclosed with the admission notification. Transfer evaluations are not provided to postbaccalaureate students or to students who have not submitted official transcripts.

Academic probation/disqualification from other institutions. Academic probation/disqualification will not affect the admissibility of a student whose complete academic record meets the minimum admission requirements in effect at the time of application. A student who fails to meet the minimum admission requirements must petition the Office of Admissions, Registration and Records.

Disciplinary disqualification. A student who has been disqualified from another institution for disciplinary reasons must be eligible to re-enroll at that institution to be considered for admission to Portland State University. Students with extenuating circumstances may petition the Scholastic Standards Committee for a waiver of this policy.

Admission Appeals

Students who do not meet admission requirements may file an appeal for additional consideration. Contact the Office of Admissions, Registration and Records at P.O. Box 751, Portland, OR 97207-0751, 105 Neuberger Hall, by email at admissions@pdx.edu, or phone 503-725-3511. Admission appeal information is available online at www.pdx.edu/admissions/freshman_appeals.html or www.pdx.edu/admissions/transfer_appeals.html.

International students

Application

Applicants who are not U.S. citizens or immigrants are considered for admission as international students. Candidates for admission are given priority if complete applications are filed by:

- ◆ March 1 for fall term
- ◆ July 1 for winter term
- ◆ November 1 for spring term
- ◆ February 1 for summer term

Applications will be considered for all terms subject to department and/or University restrictions and/or course availability. Graduate-level applicants should contact the appropriate academic department for specific departmental application information.

International applicants should submit the following information to the Office of Admissions, Registration and Records. All documents submitted become the property of PSU and cannot be photocopied, returned, or forwarded to third parties.

1. Application form and \$50 non-refundable application fee. The application and nonrefundable application fee are valid for one academic year only. The \$50 fee cannot be waived.

2. Admission validation. To validate admission, the student must register for classes during the initial term of admission. If the student does not register for this term, the application can be updated to one of the next three consecutive terms without repaying the fee. After this time period, the student must submit a new application along with another \$50 fee.

3. Official transcripts. To be considered official, transcripts must arrive in the Office of Admissions, Registration and Records in a sealed envelope from the issuing school. Applicants whose admission will be based on high school/secondary school graduation should submit official transcripts of their final four years of high school/secondary school study. Transfer students must submit official transcripts from each college or university attended, regardless of whether or not they feel their prior academic study may be relevant to their PSU study. Transfer students with fewer than 30 quarter credits of college/university coursework are also required to submit transcripts from their final four years of high school/secondary school. Credits from accredited schools outside the U.S. will be transferred to PSU according to established international transfer credit guidelines and policies. See Academic Credit section of this *Bulletin* for more information. Students who knowingly submit altered or falsified academic records or other application documents jeopardize their admission status and may have their admission rescinded and/or registration canceled.

4. Proof of English language proficiency (as described below).

5. Evidence of adequate financial resources for educational and living expenses. (International applicants residing in the United States on visas other than F-1 or J-1 student visas are not required to submit proof of financial resources.)

6. Proof of current immigration status (if already residing in the United States).

Intensive English Language Program. Persons seeking English language training only, who do not wish to continue toward university-level academic study, may apply for admission to the Intensive English Language Program (IELP). However, persons who want to study English before beginning academic study are eligible for conditional undergraduate or postbaccalaureate admission without minimum English language proficiency test scores.

The IELP provides *non-credit* classes only; therefore, no university-level academic credit will be offered. Students must have earned the equivalent to a U.S. high school diploma for admission consideration. Prospective students must be in legal U.S. immigration status at the time of application.

Contact the Department of Applied Linguistics, 503-725-4088 or www.esl.pdx.edu, for additional requirements.

Admission Requirements

Applicants must demonstrate an appropriate level of academic preparation. PSU offers conditional admission to undergraduate applicants who do not have the required level of English language proficiency.

Freshman: completion of U.S. academic (university preparatory) high school or secondary school equivalent as determined by the Office of Admissions, Registration and Records with a minimum 3.00 GPA.

Transfer: completion of 30 transferable college quarter credits, excluding ESL courses, with a 2.25 GPA or higher at a U.S. regionally accredited college/university or equivalent as determined by the Office of Admissions, Registration and Records. Transfer students who present a transferable associate's degree or an Oregon Transfer Module (OTM) will be admitted with a minimum cumulative 2.00 GPA.

English language proficiency requirement. Admitted students who meet the English language proficiency requirement may enroll in academic classes. Those who do not meet this requirement will be restricted to ESL classes until the requirement has been met. Applicants may demonstrate English language proficiency by submitting the following test results.

Test of English as a Foreign Language (TOEFL).

Paper-Based Test (PBT)	525
Computer-Based Test (CBT)	197
Internet-Based Test (IBT)	
Overall Score	79
Subsection Scores	
Reading.....	18
Listening.....	18
Speaking.....	16
Writing	16

Information on the international TOEFL is available from TOEFL, P.O. Box 899, Princeton, NJ 08540 or at www.toefl.org. Information on the PSU institutional TOEFL is available from PSU Testing Services, 503-725-4428 or www.testing.pdx.edu.

International English Language Testing System (IELTS). A minimum overall band score of 6.5 with minimum 6.0 on each individual band score. Information on the IELTS is available from

IELTS International, 1024 West Orange Grove Ave., Arcadia, CA 91006 or www.ceii.org.

Admission to professional programs and schools

Admission to Portland State University does not automatically admit students to its professional programs and schools. Standards for admission and evaluation of transfer credits often exceed general University requirements. Students should check this catalog under the appropriate academic unit to determine if a unit has special admission requirements.

Students returning to PSU after an absence

Former Portland State University students who have attended another college or university since leaving PSU and who wish to enroll after an absence must submit a re-enrollment application form to the Office of Admissions, Registration and Records. Official transcripts must be submitted from each institution attended since leaving PSU. The filing date for a re-enrollment is the same as for new students.

Transfer credit policies

Accredited colleges and universities. The Office of Admissions, Registration and Records evaluates credits from accredited colleges and universities. Portland State University accepts college-level credits earned in academic degree programs at colleges and universities accredited by regional accrediting associations and as recommended in Transfer Credit Practices of Designated Educational Institutions. All courses are evaluated to be either equivalent or parallel to PSU courses. Equivalent means that the catalog course description is substantially equal to that in the Portland State University Bulletin. Parallel means that the course is in a discipline which is offered by Portland State, even though PSU does not offer the specific course.

Unaccredited institutions and foreign colleges and universities. Departmental representatives, working through the Office of Admissions, Registration and Records, are authorized to evaluate credits transferred from unaccredited institutions or foreign colleges and universities after a student has been admitted to PSU. International students requesting transfer of credit from foreign institutions must supply catalogs and/or documentation of course content from those institutions

before consideration of transfer evaluation can be made. Work from unaccredited schools is evaluated in accordance with the institutions and policies listed in *Transfer Credit Practices*, published by the American Association of Collegiate Registrars and Admissions Officers. Credit given for a particular course will not exceed credit given for the equivalent or corresponding PSU course.

Co-admission programs. Portland State University has established co-admission programs with Chemeketa Community College, Clackamas Community College, Clark College, Clatsop Community College, Mt. Hood Community College, and Portland Community College. Each co-admission program allows students to concurrently enroll at both PSU and the community college campus. In addition, the program provides for PSU academic advising and, if qualified, financial aid for both PSU and the community college courses. Applicants should contact Clackamas Community College at 503-657-6958, ext. 2770, Clark College at 360-992-2107, Clatsop Community College at 503-338-2411, Mt. Hood Community College at 503-669-6996, Portland Community College—Sylvania at 503-977-4519, Chemeketa Community College at 503-399-5006, or the Office of Admissions, Registration and Records at 503-725-3511 for more information.

Associate degree transfers. Students who upon admission have completed an Associate of Arts-Oregon Transfer (AAOT) degree at an accredited Oregon community college or another PSU-approved associate degree, have met all lower-division general education requirements. The student must still fulfill any outstanding

upper-division general education requirements. The transfer A.A. may not satisfy all requirements for admission to professional schools. Please check with each school for specific admission requirements.

Vocational and technical schools.

Portland State University grants up to 12 credits for courses which are deemed vocational-technical. These credits are transferred to PSU as general elective credits.

Oregon Transfer Module (OTM)

Consistent with OUS transfer policy, students may earn an OTM at Portland State. Transfer students who present an earned OTM from another Oregon institution will be granted a minimum of 45 quarter credit hours toward their general education graduation requirements. See www.pdx.edu/admissions/otm.html.

Correspondence credit. A maximum of 60 correspondence credits is acceptable in transfer from schools recognized as institutions of higher education.

Community and junior colleges. The number of lower-division credits to be accepted in transfer from regionally accredited junior colleges and the Oregon community colleges is limited to 124.

National Student Exchange Program.

Portland State is a member of the National Student Exchange Program, which enables sophomores, juniors, and seniors to attend on of 174 institutions in other areas of the nation for up to one academic year. Students pay in-state tuition. Call 503-725-3511 or go online to www.pdx.edu/admissions/ugrad_nse.html for applications.

College courses completed before high school graduation. College courses taken before a high school diploma is received are accepted in transfer provided

the student receives grades of D- or above in the courses and the grades are posted on a college transcript.

Health science professions. Students who have completed preprofessional programs at PSU may transfer up to 48 credits of their professional health science work from schools accredited by a regional association and/or as indicated in *Transfer Credit Practices*. The health science students may not receive a bachelor's degree from PSU and from the professional school when both degrees are based essentially on the same credits completed by the student. The residence credit requirement is satisfied by completing 45 of the last 60 credits at PSU, after admission to PSU and prior to formal enrollment in the qualifying professional program. The student must be within 48 credits of receiving a bachelor's degree from PSU at the time of matriculation into the professional program.

Through affiliation agreements from fully accredited programs at the Veterans Administration Medical Center in Portland (NMT), Mayo School of Health Related Sciences in Rochester, Minn., (CYT) and Memorial Sloan-Kettering Cancer Center in New York (CYT), credits will be transferred to Portland State University in a manner equivalent to academically based programs.

Postbaccalaureate status

New students holding a baccalaureate degree who are not seeking a graduate program may be admitted as a postbaccalaureate. A postbaccalaureate student has earned at least one baccalaureate degree and is admitted to PSU for the purpose of earning another baccalaureate degree or certificate. These students are not admitted to an advanced degree program. PSU stu-



dents, upon graduation, need to be admitted as a postbaccalaureate if they seek another undergraduate degree or wish to take 9 or more credits a quarter. Postbaccalaureate students are subject to all academic policies.

Veterans' certification requirements

503-725-3876

Some programs at Portland State University are approved for the training of veterans. Veterans considering entering PSU are expected to meet admission requirements appropriate for their educational backgrounds. (Please see Veterans' Services under Student Services for instruction in how to apply.)

Academic credit. After admission, credit may be granted for some types of military service courses on the college level where equivalency to Portland State courses can be shown. Veterans should provide transcripts from appropriate military schools and a copy of VA form DD214 to the veteran's certification section of Admissions, Registration and Records office upon application to PSU.

Satisfactory progress standards. In order to maintain satisfactory progress, the student veteran must complete the following credits:

Certified for:	Undergraduate:	Graduate:
Full time	12 credits	9 credits
Three-quarter time	9 credits	7 credits
One-half time	6 credits	5 credits

The cumulative GPA at Portland State University required to maintain satisfactory progress is 2.00. One hundred and eighty (180) credits are required to graduate with a baccalaureate degree (the total is greater in some programs). Incompletes, withdrawals, and audits do not count toward credits completed and may result in a VA overpayment.

For reporting purposes, the last date of attendance is the same as the date of official withdrawal from class or classes, date of student notification of a change in credits to the Veterans' Clerk, or the date of determination of unsatisfactory progress, whichever is earliest. This date determines the amount of overpayment, if any, incurred by a student not maintaining satisfactory progress standards.

Courses may be dropped during the drop periods, but student veterans are still responsible for reporting any changes in credits which affect the rate of VA certification. The number of credits completed is checked against the number of credits for which the veteran is certified each term by the Veterans' certification clerk.

Failure to maintain satisfactory progress

standards at Portland State University will result in the termination of G.I. benefits.

Please contact Veterans' Services, 503-725-3876, 425 Smith Memorial Student Union, for more information.

Part-time students/non-admitted students

The *Schedule of Classes*, published each term, contains information needed to register as a part-time student or a non-admitted student. Part-time and non-admitted students are subject to the same rules as full-time students with regard to Academic Standards (academic warning, probation, dismissal) and registration deadlines (drop, add, tuition refunds, grade option changes etc.). Tuition payment is required by published deadlines. The *Schedule of Classes* is available online at www.pdx.edu/registration/class_schedule.html.

Part-time status is defined as enrollment in fewer than 12 credit hours for undergraduates, and fewer than 9 credits for graduate students. Credit work taken as a part-time student is acceptable in most degree programs, subject to University regulations. A fully admitted student may earn most University degrees as a part-time student and some degrees may be earned by taking courses exclusively at night. Part-time students should meet regularly with an adviser for academic planning and information on up-to-date requirements and University policies.

A student may take a maximum of 8 credits per term without applying for formal admission. A Quick Entry form is used to add the student to the registration system. There is a one time, nonrefundable fee. Non-admitted students do not qualify for financial aid nor do they receive transfer evaluations. Non-admitted students are considered to have part-time status. Non-admitted students are allowed to preregister after admitted students. A Quick Entry form is available online at www.pdx.edu/admissions/ugrad-qkentry.html.

Students who wish to take 9 or more credits must be formally admitted to the University. Students who plan to earn a degree at PSU should be admitted formally as soon as possible.

Senior Citizen Enrollment

Senior citizens (persons 65 or older) not enrolled as regular students, may take classes on a space-available basis at no charge other than for special materials, if any. The University does not maintain any records of senior citizen enrollments, but the registration receipt may be used to obtain a library card. Contact the Senior Adult Learning Center, 113A Urban and Public Affairs Building.

Student Records

The University Student Records Policy, in accordance with the federal Family Educational Rights and Privacy Act of 1974 as Amended, governs the collection, use, and disclosure of student records with the goal of ensuring their privacy. Generally it provides the right to nonrelease of confidential information except as directed by the student in a transcript request, or as provided by law; the right to inspect educational records maintained by the University; the right to correction of errors, a hearing if necessary, and the right to file a complaint with the U.S. Department of Education. Copies of the full Student Records Policy are available from the Office of Student Affairs and the Office of Admissions, Registration and Records or online at www.pdx.edu/registration/privacy.html

Retention of student documents. All documents submitted to PSU become the property of the University and may not be copied or returned to a student. Transcripts from other institutions cannot be copied.

Release of student information. Please note: The privacy laws do not permit the University to discuss a student's academic or University information with anyone other than the applicant. All inquiries must originate with the applicant.

Student orientation programs

503-725-5555

www.pdx.edu/orientation

The Office of Admissions, Registration and Records coordinates an orientation program for all undergraduate students new to PSU. This includes students coming to PSU directly from high school, students returning to college after an absence, and students transferring from other institutions of higher education.

After admission to PSU, each undergraduate student receives information about attending a one-day orientation session prior to the beginning of her or his first term.

Orientation provides students with the opportunity to meet with current PSU faculty, professional staff, and students in order to:

- ◆ Understand academic requirements of a baccalaureate degree
 - ◆ Successfully develop an academic plan and register for courses
 - ◆ Access programs and services available to PSU students
 - ◆ Facilitate the academic and social transition to the University community
- New Student Week is part of the orienta-

tion program that takes place the week prior to the start of fall term during the month of September. This is a week of activities, information sessions, open houses, and social events in which new students are invited to attend and encouraged to participate. For further information write to orientation@pdx.edu or view the Web site at www.pdx.edu/orientation.

Enrollment process

Registration. Students who have been formally admitted or who have filed a Quick Entry form may register for classes online at www.pdx.edu during the preregistration period for a given term. Registration dates are determined by student class level and admissions status and are listed under the term Priority Registration Schedule. Course offerings, detailed instructions for registration, priority registration dates, and a detailed academic calendar are published in the *Schedule of Classes* each term.

The printed version of the *Schedule of Classes* is available exclusively from the Portland State University Bookstore at \$1 per copy. A current online version is available at www.pdx.edu/registration/class_schedule.html. The schedule is available approximately six weeks before the beginning of classes for winter and spring, and available in May for the following fall term.

Registration activity, which includes adding courses, dropping courses, and changing grading options, is available from the start of the preregistration period through the end of the second week of the term. Courses must be dropped during the first week of the term in order to avoid a refund penalty.

The academic regulations which govern drops and withdrawals are described in detail under "Grading System for undergraduates" on page 51. The academic calendar, contains deadlines related to adding and dropping classes, making grade changes, withdrawing from classes, and refund percentages. These deadline dates are important as they determine the extent of financial obligations incurred by registration activity and they determine if and how a course registration will be recorded on a student's transcript. Students who withdraw or drop may be entitled to certain refunds of fees paid. See the online *Schedule of Classes* at www.pdx.edu/registration/class_schedule.html for more information.

Non-attendance. Although it is the student's responsibility to drop courses they do not wish to attend, the University reserves the right to drop students who do not attend classes or do not have the proper prerequisites. Non-attendance does not

cancel the tuition charges nor prevent the course and grade (F, NP, X, or M) from appearing on the student's academic record. Note: Students receiving state or federal aid who receive all X, M, NP, W, or F grades for a term will be required to provide the Financial Aid Office with proof of attendance. Students who do not submit proof of attendance within the specified period of time are subject to having all of their federal and state funds returned.

Undergraduate programs

Portland State University is committed to providing for its students maximum opportunities for intellectual and creative development within the context of its urban and international mission. Students earning a baccalaureate degree will complete a rigorous program of study leading to mastery of the chosen field of study at the undergraduate level. In addition, Portland State University is committed to providing the foundation for continued learning after completing the baccalaureate degree. This foundation includes the capacity to engage in inquiry and critical thinking, to use various forms of communication for learning and expression, to gain an awareness of the broader human experience and its environment (local, national, and international), along with an ability to appreciate the responsibilities of individuals to themselves, each other, and community.

Undergraduate students at Portland State University may work toward a Bachelor of Arts, a Bachelor of Science, or a Bachelor of Music degree, with one or more majors. See the "Programs of Study" chart on pages 9-11 for majors leading to a baccalaureate degree.

Students working toward a bachelor's degree must complete the (1) University requirements, (2) University Studies (general education) requirement, (3) Bachelor of Arts, Bachelor of Music, or Bachelor of Science requirements, and (4) requirements for a major. Students majoring in Liberal Studies or the Honors Program do not need to meet the general education requirement. Specific requirements for a baccalaureate degree are detailed by the chart on page 51. Students pursuing supplementary programs must complete additional requirements as specified in the curricula of these programs.

Students working toward a bachelor's degree may wish to supplement their major coursework with:

A certificate program, a concentration of courses in one of the following specialty fields: black studies, Canadian studies, Chicano/Latino studies, criminology and

criminal justice, European studies, international business studies, Latin American studies, Middle East studies, teaching English as a second language, teaching Japanese as a foreign language, urban studies, or women's studies. A certificate program is only available upon graduation or as a postbaccalaureate.

A minor in anthropology, architecture, art, athletic training, biology, black studies, business administration, chemistry, civic leadership, classical studies, communication studies, community development, computer applications, computer science, criminology and criminal justice, design management, economics, electrical engineering, English, environmental engineering, environmental studies, film studies, foreign languages, geography, geology, health education, history, international economics, international studies, jazz studies, linguistics, mathematics, music, Native American studies, philosophy, physics, political economy, political science, professional writing, psychology, real estate development, real estate finance, sociology, space and planetary science, sustainability, sustainable urban development, theater arts, time arts, and women's studies. A minor is only granted with a baccalaureate degree.

A nondegree preprofessional program in agriculture, chiropractic, clinical laboratory science, cytotechnology, dental hygiene, dentistry, forestry, law, medicine, naturopathic medicine, nuclear medicine technology, nursing, occupational therapy, optometry, osteopathy, pharmacy, physical therapy, physician assistant, podiatry, radiation therapy, and veterinary medicine.

Postbaccalaureate studies

Second baccalaureate degree. A candidate for a second baccalaureate degree must complete the following:

1. Residence credit after earning first degree: if the first degree was from Portland State University, 36 credits; if the first degree was from another college or university accredited by a recognized regional association, 45 credits.

Restriction: At least 25 of the 45 credits must be for differentiated grades (A-F).

2.a. Bachelor of Arts degree: if the first degree was not a B.A., students must complete 28 credits to include:

- ◆ 12 credits in arts and letters distribution area with minimum of 4 in fine and performing arts
- ◆ 12 credits in science and/or social science distribution area with minimum of 4 in science
- ◆ Four credits in a foreign language numbered 203 or higher.

- b. Bachelor of Music degree: if the first degree was not a B.M., students must complete program in music and applied music as prescribed by the Department of Music
- c. Bachelor of Science degree: if the first degree was not a B.S., students must complete 28 credits to include:

- ◆ Minimum 12 credits science including 8 with lab (excluding math/statistics)
 - ◆ Minimum 12 credits arts and letters and/or social science
 - ◆ Minimum 4 credits math/statistics
3. Requirements for a major: Courses taken as a postbaccalaureate student or as part of the first degree program count toward the major. Students do not need to meet the general education requirement.

Admitted postbaccalaureate students must maintain a cumulative GPA of 2.00 on all work taken at PSU. Failure to do so will result in academic warning, probation, or dismissal.

Postbaccalaureate students who do not hold a degree from a university where the language of instruction is English must satisfy the Wr 323 requirements before graduation from PSU.

Certificate candidates holding a baccalaureate degree. A candidate for a certificate holding a baccalaureate degree must complete the following:

- ◆ If the first degree is from Portland State University, credits in residence needed to complete the certificate requirements.
- ◆ If the first degree is from another accredited college or university, 30 credits in residence at Portland State University, including that work needed to complete the certificate requirements. Postbaccalaureate students who do not hold a degree from a university where the language of instruction is English must satisfy the Wr 323 requirements before completion of a certificate program.

Catalog eligibility

Catalog eligibility rules: Students may graduate according to the requirements of the PSU catalog in effect when they first enrolled at any accredited, postsecondary institution, subject to the seven-year rule (see below). Once enrolled, students may graduate under the guidelines of any catalog issued after their first enrollment, whether or not the student was enrolled during the year in which said catalog was in effect. This applies to all PSU students regardless of whether or not they are transfer students.

Seven-year rule: No catalog is valid for longer than the summer term following the seventh academic year after issuance of the catalog. The 2006-2007 catalog will

expire at the end of summer term, 2013. A student must meet the requirements of a catalog for which the student is eligible and which is valid at the time of the student's graduation. This applies to a first bachelor's degree, to a second bachelor's degree, and to certificates which may be earned by undergraduates and by postbaccalaureate students.

Double major

Students with two or more majors must satisfy the University Studies general education requirements for the first major only. When a double major includes a liberal studies major, the University Studies general education requirements are to be satisfied for the departmental major.

Assessment

Students at Portland State University participate in assessment activities within their programs of study. Assessment activities may include standardized testing, placement tests, surveys, portfolios of student work, group or individual interviews, or classroom research. Results are used to inform the process of teaching and learning, the design and implementation of programs and curricula, and efforts to describe and improve the student experience at Portland State University.

Incoming students to PSU may be required to take a writing assessment and, based on the results of that assessment, take an assigned writing course.

Academic credit

A credit is the basic unit of measurement of educational accomplishment. One credit normally connotes 10 hours of lecture-recitation or 20 or more hours of laboratory, studio, or activity work. The majority of courses at Portland State University involve three or four hours per week of lecture-recitation. PSU is on the quarter-system calendar. Semester credits transferred from other accredited United States schools may be converted to PSU's credits by multiplying by 1.5.

The 1.5 multiplication rules apply only to semester credits transferred from U.S. schools. Semester credits transferred from accredited schools outside the United States will be converted according to established international transfer credit guidelines and policies.

A student should enroll for an average of 15 credits per term in order to be graduated within the normal 12 terms. Employed students should make sure they are not overloading themselves. They may want to plan to spend more than 12 terms to complete degree requirements. Undergraduate students desiring to take more than 21 credits must obtain approval as follows:

22-25 credits: Obtain approval of adviser on Consent for Overload form available at the Registration window, Neuberger Hall lobby.

26 or more credits: Petition to Academic Requirements Committee. Forms are available at the registration window, Neuberger Hall lobby. Such petitions must be submitted by the last day to pay without a late fee.

Class standing. Class standing is based on the number of credits a student has completed, according to the following schedule:

Acceptable status	Credits completed
Freshman	1-44
Sophomore	45-89
Upper-division standing	90 or more
Junior	90-134
Senior	135 or more
Postbaccalaureate	Hold a degree from an accredited college or university

Grading System for Undergraduates

The undergraduate grading system applies only to undergraduate courses.

The undergraduate grading system gives students the choice of taking certain courses designated by departments for either differentiated (A, B, C, D, F) or undifferentiated (pass or no pass) grades.

The following grading scale is employed at the undergraduate level:

A = 4.00	B- = 2.67	D+ = 1.33
A- = 3.67	C+ = 2.33	D = 1.00
B+ = 3.33	C = 2.00	D- = 0.67
B = 3.00	C- = 1.67	F = 0.00

Evaluation of a student's performance is determined by the following grades:

A—Excellent
B—Good
C—Satisfactory
D—Inferior
F—Failure
P—Pass
NP—No pass

The following marks are also used:

I—Incomplete
IP—In Progress (UnSt 421 only)
W—Withdrawal
Au—Audit
X—No basis for grade
M—Missing grade/No grade received

The *Schedule of Classes* identifies courses as offered under the differentiated or undifferentiated option. Students electing the undifferentiated grade option when it is offered are graded pass or no pass. In the majority of instances, a pass grade is equated to a C- grade or better (some departments accept only C or better). Please check with the department. Pass/No Pass grades are not used in computing a stu-

dent's GPA. A maximum of 45 credits graded P may be applied toward Portland State's baccalaureate degree. Students elect grade options for specific courses during the registration period. Grading options may not be changed after the fifth week of the term. The undifferentiated grade option may not be used to repeat a course previously taken for differentiated grade or for major requirements in some departments.

Incompletes. A student may be assigned a mark of I by an instructor when all of the following four criteria apply: Quality of work in the course up to that point is C- level or above.

Essential work remains to be done. "Essential" means that a grade for the course could not be assigned without dropping one or more grade points below the level achievable upon completion of the work.

Reasons for assigning an I must be acceptable to the instructor. The student does not have the right to demand an I. The circumstances must be unforeseen or be beyond the control of the student. An instructor is entitled to insist on appropriate medical or other documentation.

Consultation must have occurred and a formal agreement must be reached between instructor and student.

A written record of the remaining work and its completion date should be kept by both instructor and student. The instructor may specify the highest grade that may be earned. This should not exceed the level of achievement displayed during the normal course period.

The deadline for completion of an Incomplete can be no longer than one year. The instructor may set a shorter deadline which shall be binding. An agreement to a longer period must be by petition to the Scholastic Standards Committee.

Failure to make up the incomplete by the end of one calendar year will result in the mark of I automatically changing to a grade of F or NP, depending on the grading option chosen by the student at registration. The instructor, department chair, or dean may set earlier deadlines.

For graduating students, incompletes awarded in fall term 2006 or later will be automatically changed to a grade of F or NP prior to conferral of the degree. The faculty of record must file supplemental grade changes no later than 30 days after the degree is awarded. Grades of F or NP will remain on the academic record after the degree is awarded and cannot be removed.

In cases where a student's inability to complete the work by the deadline is due to extraordinary circumstances such as catastrophic injury or illness, petition can be made to the Scholastic Standards

Committee who will review the case to determine appropriate action.

Drops and withdrawals. The student must initiate drop/withdrawals from a course. It is the student's responsibility to withdraw properly by the deadline dates published in the quarterly *Schedule of Classes*. To avoid having to pay special deposit fees, students should refer to departmental policies.

A student may drop with no record of the course on the transcript up to the end of the fourth week of the term. As a courtesy, students are advised to notify the instructor concerned of the intended drop.

A student may withdraw for any reason before the end of the fifth week without the instructor's approval. To withdraw in the sixth to the end of the eighth week, the student is required to get the instructor's approval. A student withdrawing in the fifth through the eighth week will have a "W" recorded on the transcript.

A student cannot withdraw after the eighth week without approval of the Deadline Appeals Committee. A "W" is recorded if the petition is allowed.

Deadline dates for drops and withdrawals are given on the calendar page of the *Schedule of Classes*. Date of withdrawal is the date it is received by Registration.

If a student, to the best of the instructor's knowledge, has never attended class, the name on the grading register may be assigned an X grade. An auditor may also be assigned an X for insufficient attendance only.

A student who has participated in a course but who has failed to complete essential work or attend examinations, and who has not communicated with the instructor, will be assigned a D, F, NP, or whatever grade the work has earned. Students who withdraw from all courses in any given term must notify the Office of Financial Aid on or before the date of complete withdrawal.

Grade Point Average (GPA). The Office of Admissions, Registration and Records computes current and cumulative GPAs on student grade reports and transcripts, according to the following scale: A = 4, B = 3, C = 2, D = 1, F = 0. A plus grade increases the points by 0.33, a minus decreases it by 0.33 (e.g., B- = 2.67). Cumulative grade point averages include all credits and points earned at PSU. Separate GPAs are calculated for undergraduate courses and for graduate courses. For further details on academic standing, see the quarterly *Schedule of Classes*.

GPA repeat policy. This policy only applies to undergraduate duplicate courses. Credit and GPA are retained on the first A, A-, B+, B, B-, C+, C, C-, and all

grades in subsequent attempts count in GPA. The first PSU grade of D or F may be forgiven if repeated at PSU for a differentiated grade (not P/NP). In this case, credit is retained on the last grade received. Both grades are retained on the transcript. If repeated more than once, each subsequent grade will be retained on the transcript and counted in the GPA.

Term and Latin Honors

Term honors list. Portland State University recognizes and honors the academic accomplishments of our undergraduate students each term by awarding placement on the Dean's List and the President's List. High achieving students, as indicated by grade point averages, are placed on the Dean's or the President's List according to the criteria established by the Council of Deans. Dean's List and President's List awards are only given to undergraduate students who have not yet earned a baccalaureate degree. The awards are given at the end of each term and are not recalculated based on grade changes or the removal of incomplete grades. The award is acknowledged through a letter from the respective dean's office and with a notation on the student's academic transcript.

PRESIDENT'S LIST AND DEAN'S LIST

Full-time. Students who have a term GPA of 4.00 are placed on the President's List, and students who have a term GPA of 3.75-3.99 are placed on the Dean's List. Students on both lists must be admitted undergraduate students with a cumulative GPA of 3.50 or better, carrying 12 credits or more (excluding AU and P/NP credits).

Part-time. Admitted undergraduate students with a cumulative GPA of 3.50 or better, carrying fewer than 12 credits for a given term may qualify for the President's List (4.00 GPA) or Dean's List (3.75-3.99 GPA) if both of the following conditions are met:

- ◆ A minimum of three part-time terms must be completed in succession, without interruption by either a term of full-time enrollment or the awarding of Dean's List or President's List
- ◆ At least 12 credits (excluding AU and P/NP credits) must be earned over the combined part-time terms and the student must have an average GPA of 4.00 (President's List) or 3.75-3.99 (Dean's List) over the combined terms

LATIN HONORS AT GRADUATION

Latin honors designations are conferred at the baccalaureate level to students who have earned the requisite PSU GPA and who have earned a minimum of 72 credits from PSU, with at least 60 of those credits

taken for differentiated grades (A-F). The GPA calculation is based on PSU credit and utilizes the current PSU repeat policy. The award levels are as follows:

summa cum laude—3.90-4.00
 magna cum laude—3.80-3.89
 cum laude—3.67-3.79

Latin honors are noted on academic transcripts, inscribed on diplomas, and honors candidates are identified in the commencement program.

Grade requirements for graduation. In order to earn a bachelor's degree, a student must earn 180 credits (more required in some programs) with grades of A, B, C, D, or P.

A student must earn at least a 2.00 GPA on residence credit, that is, credit taken at PSU.

A student must earn at least a 2.00 GPA on all courses taken in the student's major field. As some departments have additional conditions, check Requirements for Major in the major department description in the *Bulletin* to determine the minimum GPA required for your major and whether D or P grades may be counted toward the major.

A student completing a minor must meet the GPA prescribed in the description of the minor.

A maximum of 45 credits graded P may be counted toward the 180 credits required for graduation. At least 25 of the last 45 credits must be taken for differentiated grades. P/NP credits transferred from institutions outside the United States are not included in the 45-credit maximum.

Academic standing

Undergraduate and Postbaccalaureate Undergraduate Students

The faculty Scholastic Standards Committee (SSC) has the authority to place on Academic Warning, Probation or Dismissal any student according to the following standards:

Academic Warning — Any student with 12 or more attempted credits whose cumulative PSU GPA falls below a 2.00 will be placed on academic warning. A registration hold will also be applied to the student record until he/she has attended a mandatory workshop facilitated by the Information and Academic Support Center (IASC).

Academic Probation — Students on academic warning will be placed on academic probation if they do not meet at least one of the following requirements:

1. Raise the cumulative PSU GPA to 2.00, thereby returning to good standing *or*
2. Earn a GPA for the given term of 2.25 or above, thereby remaining on academic

warning and subject to the same requirements in the next term.

Academic Dismissal — Students on academic probation will be dismissed at the end of the term if they do not meet at least one of the following requirements:

1. Raise the cumulative PSU GPA to 2.00, thereby returning to good standing *or*
2. Earn a GPA for the given term of 2.25 or above, thereby remaining on academic probation and subject to the same requirements for the next term.

Notes

Upon academic dismissal, a student's status may be changed by engaging the repeat policy. However, grade changes do not change the dismissal status.

Students who are academically dismissed from PSU are not permitted to register either full-time or part-time (including 1-8 credits).

When evaluating undergraduate academic standing, only PSU undergraduate credit is considered.

Students on academic warning or academic probation who receive only grades of I, X and/or NP will lose academic standing.

Reinstatement. A student who is dismissed may be readmitted to the University upon petition to, and approval by, the Scholastic Standards Committee. Petitions for current term reinstatement must be returned to the Office of Admissions, Registration and Records by the end of the second week of the term. If reinstatement is approved, the student will be reinstated to academic probation status.

Graduate Students and Postbaccalaureate Graduate Students

Graduate Academic Standing is administered by the Office of Graduate Studies and Research, 117 Cramer Hall. Refer to page 66 for information.

Credit by examination

Undergraduate students may obtain Credit by Examination in four basic ways:

- ◆ Examinations in Portland State University courses approved for Credit by Examination and administered by Portland State departments or schools.
- ◆ Examinations approved by Portland State and available through the College-Level Examination Program (CLEP).
- ◆ Advanced Placement Program.
- ◆ International Baccalaureate

For details on applications, minimum test score requirements, and basic qualifications, see "Credit by examination" on page 363.

Pre-college programs

Challenge Program

503-725-3430

Karen Tosi, Coordinator

The Challenge Program is a cooperative program between Portland State University and metropolitan area high schools. It provides high school seniors an opportunity to take regular college courses on their own campuses.

Students who have a cumulative grade point average of 3.00 or above after the completion of six high school semesters (or the equivalent in high school credits) are eligible to enroll in the Challenge Program. School district staff members review transcripts of high school students who wish to enroll in Challenge courses and select those students who have demonstrated substantial academic achievement. Students may enroll for a maximum of two classes per quarter.

The Challenge Program currently offers introductory college courses in English, foreign languages, history, and mathematics. Course content is identical to that offered to Portland State University students on the home campus. College-level texts and materials are used.

Students who successfully complete their Challenge Program coursework are entitled to a regular Portland State University transcript. The credit earned by the student can be transferred to many colleges and universities regionally and nationally.

PSU LINK

503-725-3430

Karen Tosi, Coordinator

Portland State University is committed to serving the needs of the metropolitan area by providing an academic environment for intellectually gifted students. The Leap Into New Knowledge (LINK) Program makes it possible for selected gifted high school students to attend the University for part-time advanced study in a particular academic discipline. The program is designed to serve those students who have exhausted all coursework in a particular discipline at their high schools. If a student in the field of mathematics, for example, is ready to go beyond the study of calculus, he/she can enroll in a mathematics class at the University, while simultaneously maintaining his/her high school schedule. To qualify for the program, students must be recommended to the University by their school district and must successfully complete the LINK admissions process. First opportunity goes to high school seniors. If there is space

available after seniors have been accommodated, other qualified applicants may be accepted into the program.

Student-taught courses

Chiron Studies Project

503-725-5662

Chiron Studies Project is a student-oriented program funded by student incidental fees. The purpose of the program is to support the development of courses not normally offered by the academic departments. Instruction in Chiron courses is conducted by students with faculty sponsorship; these courses are approved in the same manner as other courses by the appropriate departments and deans.

The program's objectives are:

- ◆ To provide a structure within the University where students can participate actively in implementation of courses.
- ◆ To encourage the formal use of student learning through teaching, tutoring, and advising.
- ◆ To supplement and enhance existing departmental offerings.
- ◆ To foster the development of alternative learning formats and seek, generally, to improve the experience of undergraduate education.

Proposal forms are available in 451 Smith Memorial Student Union.

Application for a degree

503-725-3438

An admitted student from Portland State University must file an application for a degree (undergraduate or graduate) with the Degree Requirements section of the Office of Admissions, Registration and Records. Commencement day is in June, a summer commencement is held in August, and degrees are issued each term. Quarterly degree application deadlines are published in the Schedule of Classes.

General University degree requirements are checked by the Degree Requirements section in the Office of Admissions, Registration and Records, 104 Neuberger Hall. All special requirements for a degree in a major will be checked and approved by the department, college, or school offering the major program.

Students bear final responsibility for ensuring that the courses taken are applicable toward satisfying their degree requirements. They are also responsible for informing the degree requirements section of any change of address while a degree candidate.

All University academic requirements must be satisfied before any degree will be conferred and all financial obligations must be met before any diploma will be released.

Commencement

Portland State University has two commencement ceremonies each year: a formal cap and gown ceremony at the end of spring term and an informal (no keynote speaker) ceremony held at the end of summer session. Information on how to participate in commencement can be found at www.commencement.pdx.edu.

Graduation

Students are encouraged to meet with their academic adviser to check their progress toward degree. It's best to meet with an adviser prior to submitting a degree application.

Undergraduate degree application forms are due two terms prior to the anticipated graduation date. Graduate degree application forms are due one term prior to graduation.

All coursework should be completed and final grades recorded to ensure smooth processing of your degree application.

Diploma. Student transcripts (official and unofficial) display PSU degree information once the graduation certification process is complete (4-6 weeks after final grades are posted). Note that this is prior to the diploma being prepared. All degree recipients are notified by mail of diploma availability (either by picking it up in the Degree Requirements Office or by having it mailed). Diplomas are usually available at the end of the term following the graduation term.

Appeals and grievances

Grievances and requests for exceptions to University requirements may be filed with committees which deal with specific student concerns.

Academic Appeals Board

This board hears appeals from students who claim to have received prejudiced or capricious academic evaluation and makes recommendations on cases to the Provost. In such cases the student should first consult with the instructor. If the grievance is not resolved, the student should then contact the department chair, then the dean of the college or school. If the grievance is still not resolved, the student may then appeal by writing a letter to the Academic Appeals Board. Appeals may be filed in the Office of Student Affairs, 433 Smith Memorial Student Union.

Academic Requirements Committee

This committee develops policies and adjudicates petitions regarding academic regulations such as credit loads, transfer credit, and graduation requirements for all undergraduate degree programs. It also develops and recommends policies and adjudicates student petitions regarding initial undergraduate admissions, including entering freshmen.

Deadline Appeals Board

A student may petition this board to be exempted from published deadlines for the current term. Cases most often handled involve deadlines for waiving late registration fees and for changing classes. Petitions may be submitted before or after the deadline date and must include documentation of the reason for missing the deadline.

Petition forms may be obtained at the Office of Admissions, Registration and Records in the Neuberger Hall lobby. For further information students may call 503-725-3511.

Scholastic Standards Committee

This committee develops and recommends academic standards with a view to maintaining the reputation of the undergraduate program of the University. It advises the Office of Admissions, Registration and Records in academic matters concerning transfer students or students seeking readmission after having had scholastic deficiencies. It assists undergraduate students who are having difficulty with scholastic regulations and adjudicates student petitions that request the waiving of regulations on suspensions (academic readmission).

University Studies

163 Cramer Hall

725-5890

www.pdx.edu/unst

Please see page 12 for University Studies (general education) baccalaureate requirements.

The faculty of PSU have designed a four-year program of study required of all students (not required for Liberal Studies or Honors Program) planning to graduate from PSU. This nationally recognized program offers students a clear opportunity to acquire the foundation for the academic and problem solving skills needed to succeed in the 21st century. University Studies offers students a program of connected educational opportunities.

The purpose of the University Studies program is to facilitate the acquisition of the knowledge, abilities, and attitudes that will form a foundation for lifelong learning among its students. This foundation

includes the capacity and the propensity to engage in critical thinking, to use various forms of communication for learning and expression, to gain an awareness of the broader human experience and its environment, and to appreciate the responsibilities of persons to themselves, each other, and their communities.

University Studies begins with Freshman Inquiry, a year-long course introducing students to different modes of inquiry and providing them with the tools to succeed in advanced studies and their majors. At the sophomore level, students choose three different courses, each of which leads into a thematically linked, interdisciplinary cluster of courses at the upper-division level. Students are required to complete 12 credits from one of these clusters. Finally, all students are required to complete a capstone course which consists of teams of students from different majors working together to complete a project addressing an issue in the Portland metropolitan community.

University Studies courses transfer to other institutions. For more information or assistance visit the University Studies Office in 163 Cramer Hall or call 503-725-5818.

Transfer students

Transfer Transition (UnSt 200 level)

Transfer Transition is a course specifically designed and recommended for students transferring to Portland State University from other post-secondary institutions. The thematically based course is designed by faculty from different disciplines assisted by student peer mentors. This 5-credit, one-term course is designed to assist transfer students in improving their communication skills, learning the process of inquiry from the perspectives of several different disciplines, and building a foundation for the effective and efficient application of information technology resources, such as the Internet and e-mail. For some students, Transfer Transition can be used as one of the required Sophomore Inquiry courses.

Freshman Inquiry

See Web or orientation guide for course descriptions.

Freshman Inquiry consists of a year-long course developed by a team of faculty from different disciplines. Freshman Inquiry has a maximum class size of 40 students and each class is divided into three small-group, peer mentor sessions

led by specially selected upper-division students. Class material is introduced and explored during the full class sessions and then assignments are developed and discussed in the peer mentor sessions.

While the themes and content of the Freshman Inquiry courses differ, the overall objectives are the same. Each of these classes emphasizes the building of a foundation of communication skills for learning and expression. Writing is the core, but communication also includes emphasis on improving oral, quantitative reasoning, and graphic/visual modes of communication. Freshman Inquiry is also designed to help students learn and effectively use current information technologies. Students will also learn how disciplines from the sciences, social sciences, humanities, and professional schools approach problems in different ways and how they work together to improve understanding of complex issues.

When students complete Freshman Inquiry they will be expected to be able to apply writing, quantitative reasoning, speech, and visual/graphic skills to problems requiring analysis and discovery. Freshman Inquiry will expand awareness of academic potential and prepare students to move on to increasingly rigorous and sophisticated levels of inquiry.

Sophomore Inquiry

See page 56 for course descriptions or current Schedule of Classes.

At the sophomore level, students complete 12 credits of coursework in Sophomore Inquiry. Students select three Sophomore Inquiry classes, each representing one of more than 26 different themes or clusters. Sophomore Inquiry classes are structured similarly to those in Freshman Inquiry with a main class and smaller mentor classes, except at this level the mentor classes are led by graduate students.

Sophomore Inquiry classes maintain an interdisciplinary approach to their individual topics, and continue to emphasize the four University Studies goals of inquiry and critical thinking, communication, the diversity of human experience, and ethics and social responsibility. Each Sophomore Inquiry class also provides an introduction to important concepts, questions, and concerns that will be explored in greater depth in the upper-division cluster courses to which it is linked.

Upper-Division Cluster

See page 56 for cluster descriptions and current Schedule of Classes for course descriptions.

After their Sophomore Inquiry coursework, students select one of three clusters represented in their Sophomore Inquiry classes. From a list of courses approved for the selected cluster, students pursue a program of 12 upper-division credits offered by various departments across campus. These classes allow students to explore an aspect of the cluster's theme in greater depth, while continuing to investigate the four University Studies goals in relation to the cluster topic.

Students might choose a cluster to broaden their perspective, allowing them the opportunity to take classes of interest outside their major, or students can choose a cluster to complement their major area of study. In either event, Upper-Division Cluster courses may not be used to fulfill a student's major requirement. In addition, students cannot take cluster courses in their major.

Senior Capstone

The culmination of the University Studies program is the Capstone course requirement. This 6-credit, community-based learning course is designed to provide students with the opportunity to apply, in a team context, what they have learned in the major and in their other university studies courses to a real challenge emanating from the metropolitan community. Interdisciplinary teams of students address these challenges and produce a summation product in a University Studies approved Capstone course under the instruction of a PSU faculty member. Many Capstone courses take place over two terms. Students need to plan their schedules accordingly.

The Capstone's purpose is to further enhance student learning while cultivating critical life abilities that are important both academically and professionally: establishing connections within the larger community, developing strategies for analyzing and addressing problems, and working with others trained in fields different from one's own.

Practicums and internships cannot be substituted for Senior Capstone course requirements.

University Studies Clusters and Sophomore Inquiry descriptions

The following are brief descriptions of the Upper-Division Clusters, including the Sophomore Inquiry courses which serve as the gateways to the clusters. Please contact the cluster coordinator for more detailed course descriptions. Contact information is also available through the Office of University Studies, 503-725-5890, 163 Cramer Hall. See page 12 for information on undergraduate requirements.

African Studies Cluster

This cluster presents interdisciplinary approaches to the study of the African continent and its peoples, their complexity and diversity. It explores problems and themes that are cultural, historical, political, and geographical, and that address fundamental issues in the construction and expression of identity and knowledge.

Sophomore Inquiry: African Studies.

This course will explore changing disciplinary and interdisciplinary perspectives on the study of the African continent and its peoples. The course examines how an understanding of the African experience, far from being exotic or distant, reaches to the core of academic struggle and intellectual debate.

American Studies Cluster

American Studies is an established interdisciplinary field both in the United States and in several other countries, including England and Japan. This cluster uses Americanist materials ranging from literature, through landscapes, to art, music, and court cases, to explore both the tensions and the traditions of American culture and society.

Sophomore Inquiry: American Studies.

This course introduces students to the interdisciplinary field of American Studies, provides a focus through which to explore sources in the humanities, social sciences, natural sciences, and performing arts, and offers an opportunity to acquire a variety of skills important in college and the work world. As the interdisciplinary study of American Culture, the course focuses on a comparison of voices or perspectives as a way of knowing American artifacts, policies, and places. Although the focus of each class may differ, they will all use their subjects as a laboratory for learning the methods and perspectives of American Studies. In the process, students will become familiar with something of the

culture, character, and environment of the United States. Each class will focus on several main texts or projects during class, and students will do an additional project either outside class and/or in their mentor sections.

Archaeology Cluster

Through the study of archaeology, students grapple with fundamental questions about what it means to be human, how we came to be the way we are, and what we might expect from the future. The field draws on research interests, methods, and explanatory approaches from multiple disciplines, including: anthropology, history, black studies, geography, biology, and geology.

Sophomore Inquiry: Archaeology. This course surveys the varieties of current archaeological approaches to the past, the kinds of questions we ask, and samples some of the most important answers.

Asian Studies Cluster

An interdisciplinary approach to understanding the diversity of cultures and societies in Asia, including both the continuities and discontinuities between past and present. History, religion, art, anthropology, geography, literature, political science, and economics provide complementary ways of grasping the complexities of contemporary Asian worlds.

Sophomore Inquiry: Asian Studies. This course introduces students to the study of diverse cultures and societies in Asia through history, literature, anthropology, and geography. Contemporary issues related to the political, cultural, and economic transformation of Asia in the twentieth century are discussed in light of tradition and its place in Asian societies as well as the powerful forces of modernity.

Classic Greek Civilization Cluster

The theme of this cluster is: What made the Greek civilization of the classical period what it was? Greek civilization was composed of several distinct features and the cluster provides a variety of courses which enable students to attain an overall view of the classical period and the influence of the Greeks on later cultures.

Sophomore Inquiry: Classic Greek Civilization. This course will investigate the history, art, archaeology, culture, and philosophies of Greece in the Classical period (600-100 B.C.). We examine Greek culture in terms of its influence on modern American culture and also focus on the differences between the two societies as a means of getting a more objective look at ourselves. Greek approaches to modern

issues such as diversity, democracy, education, and poverty are explored and their lessons for today's society considered.

Community Studies Cluster

This cluster explores the nature of the communities we live in, whether defined spatially (such as a neighborhood) or as a set of ties based on sharing a common interest. Building community has become a central debate in a number of social sciences, including sociology, political science, economics, and psychology. In a culture emphasizing individualism and individual rights, how can needs for community and responsibility to others be balanced? Thus, in this cluster, students have the opportunity to gain practical as well as theoretical experience with building communities.

Sophomore Inquiry: Understanding Communities. This course addresses social-structural issues of communities embedded in their spatial, political, and economic contexts. Specific themes that may be explored include (a) community and identity (community formation and change; conflict and cooperation within and between communities; balancing individualism and community; social control), (b) historical development and current conditions of the American city, and (c) balancing individual rights with community responsibility.

Environmental Sustainability Cluster

This cluster creates a bridge between the scientific approach to analyzing and solving environmental problems, the socio-economic concerns involved in formulating and administering environmental policy, and the historic and philosophical basis of humanity's relationship to ecosystems. With the common goal of defining, characterizing, and understanding environmental sustainability, the cluster identifies how each participating discipline can creatively contribute and thus, enable students to direct their own courses of study toward this end.

Sophomore Inquiry: Environmental Sustainability. A sustainable human society is one that satisfies its needs without jeopardizing the opportunity of future generations to satisfy theirs. This course introduces students to the study of environmental sustainability, and to the ways in which a wide variety of disciplines address environmental issues.

European Studies Cluster

Although it has had immense cultural, political, and economic influence on the rest of the world, Europeans themselves

have long debated the nature and meaning of Europe, struggling over issues such as self-identity, politics, ethnicity, class, gender, and religion. The cluster in European Studies proposes an in-depth study of European history, politics, society, and the arts in order to convey the complexity of the European scene, past and present.

Sophomore Inquiry: European Studies. Sophomore Inquiry classes in this cluster will take an interdisciplinary approach to investigate the meaning of Europe, examining the history of its development, and its contemporary relevance. Courses may analyze the historic impact of national, ethnic, religious, and class identities, or the various art forms (art, drama, and/or literature) produced by European cultures, emphasizing the arts as a forum for the portrayal of ethical issues within human experience. Courses will concentrate on teaching students to read closely history and the arts, and critically analyze both by investigating the different social, political, intellectual, and religious contexts, as well as the ideologies and symbolisms imbedded in the arts, history, and culture of Europeans.

Family Studies Cluster

The theme of this cluster is a broad exploration of family issues from diverse perspectives, which are relevant to the non-traditional PSU student. From this foundation students may pursue study of human development and multiple perspectives on families in the context of varied academic disciplines, including history, sociology, public health education, psychology, speech communication, and black studies.

Sophomore Inquiry: Family Studies. This introductory course in contemporary family issues is designed to provide a broad exploration of the family, emphasizing the current social, cultural, and political forces affecting urban families. Specific topics to be explored in-depth include: gender roles, work and family issues, poverty, teen parents, and the impact of race and culture on the family experience. A central focus throughout this course will be on the strength of contemporary families facing external challenges.

Framing the Two Cultures: Sciences and Humanities Cluster

Because the Sciences and Humanities cluster will no longer be a part of University Studies, Sophomore Inquiry: Framing Two Cultures will no longer be offered.

However, students who have previously selected this cluster will be able to complete it. Most of the upper-division cluster courses will continue to be taught.

Freedom, Privacy, and Technology Cluster

The aim of this cluster is to provide the knowledge that will enable those who complete the cluster to face thoughtfully the question of the appropriate use of and limitations upon modern technology. One important feature of the cluster is that it brings together actual sciences with humanistic and social science disciplines.

Sophomore Inquiry: Freedom, Privacy, and Technology. Privacy and freedom are highly valued, and are to some extent protected by the U.S. Constitution. Recent rapid advance in science and technology, combined with compelling motives to use this technology to control and exploit aspects of human life that have heretofore been left to chance or to individual choice, make urgent the questions about what uses of technology should be encouraged or permitted.

Global Environmental Change Cluster

Students are barraged on a daily basis with news stories of El Nino, global warming, CO₂ increasing, greenhouse effects, ozone hole, etc. This cluster will introduce some of the scientific concepts and issues of natural global cycles and how the systems have changed in the past. We will discuss the physical, chemical, and biological changes of the earth's environment in the past, present, and future. The past will concentrate on the physical, chemical, and biological changes that are recorded in the rock, ice, and sediment record. The present will concentrate on recent changes on the oceans and atmosphere, and discuss the human dimension. The future will discuss the merits and limits of global models.

Sophomore Inquiry: Global Environmental Change. This course will provide enough content and description of the global system for students to have a conceptual framework to do further study. This course will include a variety of exercises, including homework problems, writing exercises, group exercises and likely one or more mid-term exams. There will be some use of mathematics and graphical information, including use of Excel as an analytical tool. Having the computer in the classroom will allow analysis to take place in a group setting.

Healthy People/Healthy Places Cluster

Healthy people/healthy places Sophomore Inquiry and cluster courses will examine the nature and state of healthy individuals in their various environments. A dynamic approach will be used to study the places in which people live and interact, such as the community, the workplace, and the natural environment. Topics will focus on ways to solve and prevent problems that may affect the health and wellbeing of the individual, the local environment, and/or the global community. Individual behavior change, social policies, community development, and social responsibility may be emphasized.

Sophomore Inquiry: Healthy People/Healthy Places. This Sophomore Inquiry course will examine the nature and state of healthy individuals, populations, social units, and natural environments. Students will examine our state of health, including environmental, social, physical, psychological, intellectual, and spiritual health. Specific units will focus on necessary measures for improvement of current deficiencies and prevention of future problems that may affect the health and wellbeing of the individual, and the local and global community. Individual behavior change, social policies, community development, and social responsibility will be emphasized.

Knowledge, Rationality, and Understanding Cluster

Knowledge, rationality, and understanding are at once the chief goals of the academic enterprise and the subject of much current academic discussion. This study of their natures and the methods of achieving them has both theoretical interest and a practical benefit. Logic, science, and certain mathematical disciplines aim to discover rational methods of achieving knowledge and understanding. Assessments of these methods call upon the disciplines of epistemology, psychology, and philosophy of science.

Sophomore Inquiry: Knowledge, Rationality, and Understanding. An introduction to the cluster knowledge, rationality, and understanding, the course deals briefly with the nature of these, with the techniques of achieving them and with general criticisms of the techniques. Its main aim is to promote the kind of critical inquiry that has been so successful in advancing modern science, both physical and social.

Latin American Studies Cluster

With Hispanics now the largest minority group in the United States, and Brazil's economy surpassing that of Russia, Latin America is attracting considerable attention in the United States. While its people struggle to preserve the region's artistic, literary, and cultural heritage, Latin America also is experiencing rapid political and economic change. This cluster explores the rich diversity of peoples, histories, and cultures that together define Latin America.

Sophomore Inquiry: Latin American Studies. This course inquires into the colonial origins and development of Latin American society and culture, and the nineteenth century roots of political and economic dilemmas that confront the peoples of Mexico, the Caribbean, Central America, and South America. A variety of scholarly and literary sources are used to provide the student with a varied and balanced view of the rest of the hemisphere.

Leadership for Change Cluster

This cluster explores the varying theoretical frameworks of leadership studies by exposing students to a variety of leadership classes offered across the academic disciplines. The courses in the cluster will help students to understand and work with different forms of leadership within an organizational and/or community context. Students will grapple with the fundamental question of what it means to be a leader.

Sophomore Inquiry: Student Leadership for Change. This course will provide a foundation of leadership theory and will examine models of leadership in relation to the theory and concepts of change. There will be opportunities for practice, application, and documentation of leadership, and reflection on individual responsibility for and potential in leadership roles.

Media Studies Cluster

The media have become core social institutions in the dissemination of information, news, entertainment, culture, politics, social interpretation, and other spheres of everyday life. In recent years, mass communication has taken on new electronic formats and has expanded worldwide to bring more and more people and places in contact with one another, shrinking our sense of time and space. The media studies cluster serves to unify a common subject under different disciplinary and intellectual approaches, looking at both applied and interpretive aspects of image creation and symbolic exchange within and across cultural and territorial boundaries.

Sophomore Inquiry: Media Studies.

Introduction to Media Studies examines the social significance of media content, media institutions, and social changes deriving from uses of communication in different social, political, and cultural contexts. Critical approaches to this course include the study of: (1) systems of representation and their constitution; (2) structural characteristics of mass production and distribution of media products; and (3) the social impacts of mass media through changing technological forms.

Medieval Studies Cluster

This cluster is made up of courses that, taken together, present to students a broad, interdisciplinary view of medieval Europe, approximately the period from 400 to 1500 C.E. The cluster strives to distinguish the medieval cultural system(s) from those that preceded it and those that followed it.

Sophomore Inquiry: Medieval Studies.

The medieval studies Sophomore Inquiry courses introduce students to medieval life, thought, and culture in Europe and the Mediterranean Basin, from roughly 800 to 1450 C.E. All medieval studies inquiry courses are interdisciplinary in their approach and emphasize appreciation for the uniqueness of medieval culture through the analysis of literary and historical narratives, images and material life, mythologies and allegory, and religious life. Exact content will vary according to course.

Middle East Studies Cluster

The Middle East is a region of great ethnic and cultural diversity and intense nationalist rivalry. Its near monopoly of world energy supplies and geopolitical location have long made it a focus of international capital flow, labor migration, and world power competition. This cluster addresses key issues facing Middle Eastern societies in the 21st century, issues which face the United States as well: ethnicity, transnational culture, migrant labor, the politics of energy, and distribution of wealth in the context of both regional and world power structures.

Sophomore Inquiry: The Original Melting Pot: Middle East Ethnic, Politics, and Culture. This course introduces students to the distinctive cultural histories of the ethnic groups of the region and their interrelationships from Roman times to the present, examining at the same time larger political, economic, and cultural patterns at work in the region in the same period. Specific contemporary issues such as transnational culture, migrant labor, distribution of wealth are also addressed. Selections of scholarly and literary sources

are used to introduce the student to both professional views and those of the region's people themselves.

Morality Cluster

This cluster studies morality (i.e., moral learning, beliefs, values, feelings, and behavior) from the perspective of philosophy, psychology, and other academic disciplines. The aim of these courses is not just the practical moral one of improving moral thought and behavior but the more intellectual one of coming to understand better this central aspect of our human nature.

Sophomore Inquiry: Morality. This course focuses attention on the psychology of moral development, as well such philosophical questions as whether there are any objective moral standards. There will also be stress on the distinctions between philosophical questions about morality, scientific questions about morality, and moral questions themselves, as well as some effort to introduce students to the relevant methods of scientific inquiry on the one hand, and philosophical inquiry on the other hand.

Nineteenth Century Cluster

The advent of the 19th century marks the beginning of the modern age. No field of inquiry was exempt from change: politics, society, religion, philosophy, psychology, science, music, and the literary and visual arts. In this cluster, students study the ideas that emerged and evolved in various intellectual disciplines during this dynamic century which even now shape the world we inhabit.

Sophomore Inquiry: The Nineteenth Century: Revolution and Evolution. This course takes an interdisciplinary approach to the study of the development of the 19th century through its three phases: (1) Revolution, Romanticism, and Nationalism; (2) Realism, Evolution, Socialism, and More Revolution; and (3) Imperialism, the Bureaucratic State, Individualism, and Decadence.

Popular Culture Cluster

Popular culture is a vital area of study that offers new insights into our history, beliefs, diversity, emotional make-up, and socio-economic relations. Study of popular culture is an interdisciplinary approach aimed at understanding how culture links the individual and society. This cluster of courses will enable students to see everyday life with new eyes by teaching them the habits of critical thinking and query into what they would otherwise take for granted.

Sophomore Inquiry: Introduction to Popular Culture. In this course, students

begin to study popular culture through observation, reflection, description, and critical thinking in order to gain a deeper understanding of the popular myths surrounding everyday life. Students focus on several forms of popular culture and engage in discussion and interpretation individually and in group work.

Professions and Power Cluster

One of the least understood elements in the making of the modern world is the role of professions like law, medicine, engineering, education, architecture, and accounting. The people who work in such occupations form a major leadership class in society. As a group and as individuals, they play critical roles in preserving the public health, defining justice and who can obtain it, designing safe buildings, bridges, and roads, educating us for life's challenges, and regulating of our economic and financial systems. In short, they often make life-and-death decisions that affect each of us. Courses in this cluster examine the critical responsibilities professions and professionals have in our society and culture, the special training they require, the ethical dilemmas they face as a consequence of their roles, why they enjoy and how they protect their elite status, who can join their ranks, and why we are so dependent on them.

Sophomore Inquiry: Professions in the Making of the Modern World. This course is about how and why professions have become among the most important forces in modern society. Those who practice medicine, law, architecture, engineering, and experts in science, economics, and other key areas of knowledge have immense influence in our lives. We examine the sources of their power and authority in society, the ethics that govern their activities, the nature and extent of their knowledge, and who joins their ranks.

Renaissance Studies Cluster

The Renaissance, dating from approximately 1300 to 1700, saw the transition from the late medieval to the early modern world. It was the age of exploration and discovery, of the Reformation and Counter-Reformation; it saw an explosion of artistic and literary creativity. This cluster offers a broad, interdisciplinary view of the period.

Sophomore Inquiry: The Renaissance. This course examines the life and thought of this vibrant period of Western history as reflected in great works of literature and art.

Science in the Liberal Arts Cluster

The theme of this cluster is "science-in-the-making" or the ongoing process of active scientific inquiry—the processes of problem-posing, problem-solving, and persuasion. This thematic emphasis is applied to scientific inquiry in general, to the study of general natural science concepts, and to the analysis of scientific issues in political, economic, social and ethical contexts.

Sophomore Inquiry: Natural Science Inquiry. This course is designed to provide a methodological and interdisciplinary perspective on science and engage students in the collaborative scientific investigation of problems of the sort they might encounter as attentive citizens. Through the use of collaborative inquiry students learn that the modern sciences, as well as the questions they address, require teamwork both within and between specific disciplines. The course features methods of scientific investigation, analysis and graphical presentation of data, and scientific writing. The major course project deals with a real-world scientific problem in the Portland area.

Sexualities Cluster

This cluster will explore human sexualities from a variety of disciplinary and topical perspectives. While we tend to speak of sexuality in the singular, it actually encompasses a broad array of behaviors and beliefs which differ quite radically across cultures and time. Bodily sex, reproductive functions, and erotic expressions are all part of what we call "sexuality" and can be viewed from multiple vantage points, for example historically, cross-culturally, biologically, and through literature or the arts. All of the courses begin with the presumption that sexed bodies and expressions of desire are both socially constructed and highly contested. Furthermore, sex and sexuality are interwoven with other social categories, such as gender, race, class, and nationality. This topic will enable a complex exploration of the constitutive work of sexuality in the formation of social institutions and power relations. Finally, this is a theme which lends itself to interdisciplinary education, cutting across the divides between the arts, humanities, social sciences, and physical sciences.

Sophomore Inquiry: Sexualities. This course will look at sexuality with its multiple meanings as body, desire, identity, and reproduction from a variety of different perspectives. We will consider sex and sexed body as historical constructions and explore the debates about the role of biol-

ogy and culture in shaping desires, practices, and identities. We will then look at specific examples in which sexualities are regulated by societies. Finally, we will explore the interweaving of sex, race, class, and nationality.

Women's Studies Cluster

The field of women's studies originated as an interdisciplinary effort to uncover women's experience past and present. Today, the field focuses on gender as a category of analysis and explores the impact of gender on all areas of social life. Although feminist scholarship is diverse in terms of methods and theoretical frameworks, its common basis lies in this focus on gender difference and issues of inequality organized around gender. This focus is central to all courses in this cluster.

Sophomore Inquiry: Introduction to Women's Studies. In this course students analyze the varieties of women's experience in contemporary American society, consider how gender relations may be changing, and investigate the social, political, economic, and cultural forces that shape our lives as women and men. Feminist thinking within and across academic disciplines frames the exploration of these topics. Attention is paid to relations of inequality organized along lines of race, ethnicity, class, and sexual orientation as well as gender.

University Honors

Honors Program Building
1632 SW 12th
503-725-4928
www.honors.pdx.edu

B.A. or B.S.—any University major

The University Honors Program is intended for those students who plan to go on to graduate or professional school; it therefore gives highly motivated applicants the chance to develop undergraduate degree programs that reflect their particular interests.

Limited to 200 participants, the Honors Program offers a foundation course in the theory and methods of the human, natural, and social sciences, opportunities for independent study, and honors colloquia. Students are also allowed the chance to take part in the Washington, D.C., internship program provided by the program. Honors Program classes are small, and students work closely with advisers both in the program and in the academic departments of the University.

Students may major in any undergraduate degree program offered at Portland State. Requirements for majors are set by departments; students meet general education requirements through their work in the Honors Program.

Eligibility and admission. The program seeks students who will strive for academic excellence. Students who have combined SAT scores (CR and MTH) of 1200 or more and whose high school grade point averages were 3.50 or better are eligible to apply. The qualities sought in Honors Program students, however, are not always reflected in test scores, GPAs, or transcripts, and so other factors, including letters of recommendation, a writing sample, and an interview are considered.

Part-time students, transfer students, and students returning after an absence from formal education also may apply. However, because of the program's own curricular structure and the unique directions that most degree programs take, students who have completed more than 60 quarter hours of college work are not usually considered for admission.

Graduation requirements. Honors Program students are graduated after completing requirements for their majors, the liberal and general education requirements of the Honors Program, and the specific requirements of their individualized programs.

Students complete a core component of work in the Honors Program, typically around 45 credit hours, which satisfies their general and liberal education requirements. While individual core programs will vary to some extent, students will complete 8 or 10 courses in Honors (8 for technical/professional track, 10 for liberal arts track). These will include the appropriate track of the core course, "Studies," at least two courses designated as colloquia, and the two-quarter thesis project (8 credit hours).

Studies in Western Culture. A foundation course in the theory and methods of the social sciences, humanities, and sciences. "Studies" examines the politics, art, ideas, and scientific practice of major periods in Western culture, beginning with the period that has been called the "foundation of the natural sciences," the 17th century. Originally developed under a grant from the National Endowment for the Humanities, the course remains open to all Portland State students.

After freshman year, students separate into two tracks, the technical/professional track and the liberal arts track. Students in the technical and professional majors will thereafter study the organization and historical development of professional culture, while students in the liberal arts track will pursue the roots, beginning in ancient Greece and Rome and moving forward through the medieval and Renaissance periods, of the social and political movements which shape later culture.

Professors of classical studies, science studies, history, humanities, and interdisciplinary social science serve as faculty, and written work focuses on primary texts studied in the course. Students are encouraged to form study groups to supplement their classroom work.

Further information and course descriptions are available from the Honors Program Office, located in the Honors Program Building, 1632 S.W. 12th Avenue.

Visiting Scholars Project. In the junior and senior years of the honors curriculum, students participate in coursework associated with the Visiting Scholars Project. Each year several noted scholars, American or foreign, are brought to campus; they both deliver public lectures and meet with a seminar group of students from the Honors Program, who have prepared by working through an appropriate bibliography with faculty from the honors program.

Departmental honors. Some departments throughout the University offer a departmental honors option. Students should contact their major department to find out if this option is available and, if so, what the requirements are.

Courses

Courses with an asterisk (*) are not offered every year.

Hon 199
Studies in Western Culture
I-VI (tech/prof-5, 5, 5; 4, 4, 4)
I-VI (liberal arts-5, 5, 5; 4, 4, 4)

See section above for technical/professional and liberal arts section course descriptions. Studies in Western Culture I-III comprise 15 credits (12 hours lecture, 3 hours recitation); Studies in Western Culture IV-VI comprise 12 credits (lecture only, no recitation).

Hon 199
Special Studies (Credit to be arranged.)
Consent of instructor.

Hon 399
Special Studies (Credit to be arranged.)

Hon 401
Research (Credit to be arranged.)
Consent of instructor.

Hon 403
Thesis (Credit to be arranged.)

Hon 404
Cooperative Education/Internship (Credit to be arranged.)

Hon 405
Reading and Conference (Credit to be arranged.)
Consent of instructor.

Hon 407
Seminar (Credit to be arranged.)
Consent of instructor. Reading and discussion of an area to be chosen by instructor, with a seminar paper required.

Hon 410
Selected Topics (Credit to be arranged.)
Consent of instructor.

Graduate Studies

WILLIAM H. FEYERHERM,
VICE PROVOST FOR RESEARCH AND GRADUATE STUDIES
117 CRAMER HALL, 503-725-8410
www.gsr.pdx.edu

Portland State University graduate programs offer a variety of opportunities for advanced study and research, including preparation for academic or other professional careers, continuation and improvement of skills for in-service professionals, and personal intellectual enrichment and professional development. More than 5,000 graduate students are enrolled in the University's colleges and schools, and over 1,500 graduate degrees are awarded annually in the more than 70 master's and the 13 doctoral programs.

The Office of Graduate Studies oversees the University's graduate programs in the interest of ensuring quality instruction and research and promoting the highest achievement of graduate students. Located in 117 Cramer Hall, it is the principal resource concerning advanced degree requirements, degree status, petition procedures, thesis or dissertation preparation, and final oral examinations.

Graduate governance. All matters of graduate study are subject to the policies and procedures established by the Faculty Senate upon recommendation of the Graduate Council. The vice provost for Graduate Studies is responsible for conducting the affairs of the Office of Graduate Studies and for certifying to the registrar candidates who have fulfilled the requirements for advanced degrees.

Student responsibility. The student is responsible for knowing all regulations and procedures required by the University and the advanced degree program being pur-

sued. In no case will a regulation be waived or an exception granted because of ignorance of the regulation or of the assertion that the student was not informed by the adviser or other authority. The student should be familiar with information published in the *Portland State University Bulletin*, including the section on Graduate Studies and the section listing the requirements for the degree and the offerings and requirements of the major department. The department chair appoints a faculty adviser for each graduate student to assist in developing the course of study, determining deficiencies, planning the program, and clarifying special regulations. Departments can be expected to have additional degree requirements beyond those listed in the *Bulletin*.

A graduate student may petition the Graduate Council for the waiver of a University graduate academic regulation or degree requirement. The responsibility of initiating the petition rests with the student. The petition must be approved by the faculty adviser and graduate committee and is forwarded to the Office of Graduate Studies. The petition must be accompanied by supporting documentation provided by the student and the department and approved by the chair of the department/school/college graduate committee. Incomplete petitions will delay action. Petition forms are available in the Office of Graduate Studies.

The University reserves the right to require the withdrawal of any student who fails to accept responsibilities, as evidenced by conduct or scholastic achievement.



Application

Domestic application documents. In order to expedite the graduate admission process for domestic applicants, Portland State University requires that the applicant send two complete (but different) application packets, one packet to the Admissions Office and the other directly to the department. Incomplete packets sent either to the Admissions Office or to the department will seriously delay completion of the graduate admission process. Questions about the admission process should be directed to the department. Once the department recommendation for admission has been received, a student may call the PSU Office of Admissions at 725-3511 to determine the status of the University admission application.

1. The application packet sent to the Admissions Office must include:
 - a. the University application form;
 - b. the application fee;
 - c. one official transcript from every college or university attended (except PSU), including junior colleges and community colleges;
 - d. the measles immunization form.
2. The application packet sent to the department must include:
 - a. the departmental application form;
 - b. a copy of each transcript (or official transcripts, if required by the department);
 - c. other departmental requirements, which may include recommendations, resume, personal statement, essay, test scores, portfolio, and/or departmental checklist.

The department evaluates the file and recommends admission or denial of the applicant. Some departments evaluate admission applications periodically, and other departments wait until the application deadline before evaluating all applications.

Upon admission, the student will be assigned to a departmental or school faculty adviser.

The application and the non-refundable application fee are valid for one academic year. To validate admission, a student must register and pay for at least one credit in the term for which she/he was admitted. If the student does not validate admission for the admission term, that admission will be cancelled unless the student contacts the Admissions Office and requests that the admission be updated to another term within the year. If the student does not validate admission within one calendar year, the admission will be cancelled, and the student must submit a new application and new application fee.

Foreign application documents. All applicants who have attended schools outside the United States must present the following:

1. A complete and accurate chronological outline of all previous university-level education.
2. Official transcripts and/or degree certificates from all colleges and universities attended. An official transcript and/or degree certificate is a verification of an applicant's academic record issued in the original language directly from the original, issuing source. These documents must arrive at the Office of Admissions in a sealed/unopened envelope with the university stamp or signature on the closed envelope flap. An official translation must be submitted for any official transcript and/or degree certificate that is in a language other than English. For additional information about official transcripts, degree certificates, and translations, contact International Admission in Neuberger Hall at 503-725-3511.
3. A minimum score of 550 on the Test of English as a Foreign Language, which is administered by the Educational Testing Service at testing centers established throughout the world. Students who cannot obtain a TOEFL bulletin and registration form locally should write, well in advance, to: Test of English as a Foreign Language, Box 899, Princeton, NJ 08540. The minimum acceptable TOEFL score is 550 (213 for computer-based test). The International English Language Testing System exam (IELTS) may be substituted for the TOEFL; minimum acceptable score is 7.0. Native speakers of English are not required to take the TOEFL exam. Foreign applicants who have received a baccalaureate, master's, or doctoral degree from a regionally accredited U.S. institution or an equivalently accredited non-U.S. institution with instruction exclusively in English are not required by the University to take the TOEFL exam but departments and programs may require it.

The applicant must have earned the equivalent of a U.S. bachelor's degree, with first-class marks, from an institution approved by the Ministry of Education in that institution's country. The applicant must present certification of the availability of sufficient funds to meet all costs while studying at the University. Contact the Admissions Office for an estimate of expenses.

Funds for graduate assistantships and fellowships are limited, and the chances of a foreign student obtaining such aid during the first year of residence are minimal. Students from other countries are expected to carry a full academic load of 9 credits during the regular school year and are cautioned not to plan to supplement funds by part-time off-campus employment during this period.

Application deadlines for foreign students are fixed. Applications for admission and complete credentials should reach the Office of Admissions at least 6 months prior to the opening of the term. Please note that the application must be accompanied by a \$50 (U.S.) nonrefundable application fee.

Admissions requirements

Application to graduate programs at Portland State University requires two complete (but different) admissions packets, one sent to the Office of Admissions and one sent to the department. Complete applications are available from the individual academic departments.

University graduate admission eligibility is based on having been awarded a baccalaureate degree from a regionally-accredited institution and having achieved a minimal accepted GPA: an applicant with fewer than 9 letter-graded graduate credits is assessed on the undergraduate GPA; an applicant with 9 or more letter-graded graduate credits is assessed on the graduate GPA, which must be 3.00 or higher.

A student must be admitted formally to graduate status (master's, doctoral, certificate) for a program of study to be planned with the assistance of a faculty adviser. Admission to regular or conditional degree status should be obtained at the earliest possible time in order to avoid loss of credit applicable to a degree. Courses taken at PSU in postbaccalaureate status or non-admitted status are pre-admission courses and must meet all pre-admission limits and requirements.

Regular status. Students who meet the University requirements and are fully accepted by their departments or schools as potential degree candidates are given regular status. Students must have regular status to be appointed graduate research or teaching assistants and to graduate with any degree or certificate.

Conditional status (university conditions only). Students who do not meet GPA requirements for regular admission to the University are given conditional admission status if they are fully accepted by their departments (see Qualified Status below). After completing 9 letter-graded graduate hours with a 3.00 or better GPA, these students will be given regular status. Students on conditional status may not be graduate research or teaching assistants. Students admitted to the University conditionally who do not achieve a 3.00 GPA after completing 9 letter-graded graduate hours will be dropped from their graduate

programs. This condition can only be removed by the Office of Graduate Studies.

Conditional Status (both University and department conditions). Students who have both University and department conditions are subject to the University policy stated above *and* must also meet their department's conditions. Such students may not be graduate research or teaching assistants. Department conditions may be more rigorous than the University conditions; the University condition must be met for the student to continue in graduate studies at Portland State University.

Qualified status (department conditions only). Students whose department has imposed departmental prerequisites, GPA, or other requirements but who are eligible for a regular University admission are given qualified status. These students are eligible to be graduate assistants. A student may have both conditional and qualified admission status. In this case, the student is not eligible to be a graduate assistant. Department conditions can only be removed by the department.

Graduate certificate status. Students fully admitted only to a graduate certificate program may register for up to 16 credits per term. They are not eligible for graduate assistantships.

Certificate status. All students working in a planned program leading only to a postbaccalaureate certificate are given certificate status. Certificate students may be admitted to other categories of graduate study and concurrently pursue a certificate. This status includes students working on teaching certificates but does not include students admitted only to graduate certificate programs.

Postbaccalaureate status. Students not currently working for a degree but who wish to register for more than 8 credits of graduate credit courses may be admitted to postbaccalaureate status. A postbaccalaureate student wishing to be admitted to *regular degree (or graduate certificate) status* must apply in the same way as any other applicant and must meet the general University requirements and be fully accepted by the department or school. A postbaccalaureate student may find departmental enrollment limitations on many courses. Courses completed in a postbaccalaureate status are not automatically applied toward a graduate degree; each course must be evaluated and recommended by the department and is considered pre-admission credit to which all pre-admission limits and requirements apply.

University requirements for admission to graduate courses and programs. To be admitted to Portland State University for

the purpose of pursuing graduate work, applicants must satisfy minimum University requirements and be accepted by the department in which the graduate work is proposed. University graduate admission eligibility is based on having been awarded a baccalaureate degree from a regionally-accredited institution and having achieved a minimal accepted GPA: an applicant with fewer than 9 letter-graded graduate credits is assessed on the undergraduate GPA; an applicant with 9 or more letter-graded graduate credits is assessed on the graduate GPA, which must be 3.00 or higher. Any applicant whose native language is not English and who has not received a baccalaureate, master's, or doctoral degree from a regionally accredited U.S. institution or an equivalently accredited non-U.S. institution with instruction exclusively in English must pass the Test of English as a Foreign Language (TOEFL) with a minimum score of 550.

Portland State University will not confer active admission status to any graduate student pending an expected baccalaureate degree without formal written notification from the Registrar of the conferring institution confirming that all requirements for the degree have been met and stating the date the degree will be conferred. If admitted on this basis, an official transcript showing the degree will be required during the term of admission or the admission will be canceled.

To be considered for admission as a regular degree student, the applicant must present a baccalaureate degree from an accredited institution with either a minimum cumulative GPA of 2.75 in all undergraduate courses or a cumulative GPA of at least 3.00 in all letter-graded graduate credit earned at accredited institutions (a minimum of 9 credits). Applicants with 9 or more graduate credits must have a cumulative graduate GPA of at least 3.00, and this GPA supersedes the undergraduate GPA.

To be considered for admission as a conditional degree student, the applicant must present a baccalaureate degree from an accredited institution with a minimum cumulative GPA of 2.50 in all undergraduate courses. To be considered for admission as a graduate certificate student, the applicant must meet all requirements for regular or conditional graduate degree admission.

To be considered for admission as a postbaccalaureate certificate student, the applicant must present a baccalaureate degree from an accredited institution with either a cumulative GPA of 2.75 in all undergraduate courses or at least 9 letter-graded credits with a cumulative GPA of 3.00 in grad-

uate work in the proposed field of study earned subsequent to receiving the baccalaureate degree.

Departmental requirements. A department may have additional admission requirements based on previous academic achievement, scores on Graduate Record Examinations or other tests, letters of recommendation, a portfolio, or an autobiographical statement. Information regarding departmental requirements may be obtained directly from the specific department. The number of students admitted to a particular program is limited to the resources available.

Exceptional admission procedures. In situations beyond the control of a foreign applicant, when transcripts and documents are not available to confirm completion of a baccalaureate degree in a foreign university, the vice provost may employ a special admissions procedure. Upon referral by the Admissions staff responsible for foreign student admission and recommendation of the admitting department, a special panel consisting of three faculty may be appointed to review the materials available and interview the applicant. The panel shall consist of one member of the admitting department, one member of the Graduate Council, and a representative of the Office of Graduate Studies. The panel will evaluate the educational background and preparation of the applicant and review documents including letters and written testimony of persons who serve as references or are cognizant of the circumstances of the applicant's situation. The panel may determine that an equivalency of a baccalaureate degree was earned and, if so, may recommend that the student be admissible in regular or conditional status; or it may determine that an equivalency of a baccalaureate degree was not earned, and, if so, it may recommend that specific additional preparation be required in order to meet the admission standard. The vice provost for Graduate Studies shall make a final determination based upon the recommendation and the evidence presented.

Re-enrollment. Admitted graduate students who fail to enroll for credits for three terms (excluding summer), including those returning from an approved Leave of Absence, must submit a re-enrollment request to their department; if this request is supported by their department, the request is signed and forwarded to the Office of Admissions for processing. A GPA of at least 3.00 in all graduate work taken subsequent to admission to the PSU graduate program is a prerequisite for re-enrollment. Re-enrolled students are subject to all University and program requirements in effect at the time of re-enrollment.

Students submitting the re-enrollment request who have enrolled in coursework elsewhere since PSU admission must also submit two sealed official transcripts, one each to the Office of Admissions and the department, from each institution attended subsequent to PSU graduate admission.

To assure that registration materials can be prepared on time, the re-enrollment request form and supporting documents should be received by the Office of Admissions no later than three weeks prior to registration.

Enrollment

Graduate grading system. The following grading scale is employed at the graduate level:

A = 4.00	B- = 2.67	D+ = 1.33
A- = 3.67	C+ = 2.33	D = 1.00
B+ = 3.33	C = 2.00	D- = 0.67
B = 3.00	C- = 1.67	F = 0.00

The grading system at the graduate level is defined as follows:

- A—Excellent
- B—Satisfactory
- C—Below graduate standard
- D—Failure
- F—Failure

The following marks are also used:

- P—Satisfactory completion (B- or better)
- NP—No credit, unsatisfactory
- I—Incomplete
- IP—In progress
- W—Withdrawn
- X—No grade received/No basis for grade
- M—Missing grade

Although grades of C+, C, and C- are below the graduate standard, they may be counted as credit toward a graduate degree with the specific written approval of the department if taken at PSU after the term of formal admission to the graduate program. The student must have a B average (3.00 GPA) on the courses fulfilling the degree requirements (courses listed on the GO-12 form for master's students), and departments may establish a more rigorous standard. Grades of D or F indicate clearly unacceptable work and carry no graduate credit.

The grades of P/NP are used by only a limited number of departments which have received special authorization and may be counted as credit toward a graduate degree in resident credit only.

A mark of IP may be used for 501/601 Research and for 506/606 Project when a student is progressing in an acceptable manner toward completion of the work; final grades for 501/601 and 506/606 are assigned by the instructor on a Supplemental Grade Report. A mark of IP must be used for 503 Thesis/603 Dissertation when a student is progressing

in an acceptable manner; final grades for 503/603 are assigned by the instructor on the Recommendation for the Degree form (GO-17) and posted after approval of the thesis/dissertation by the Office of Graduate Studies.

Incompletes. A student may be assigned an I grade by an instructor when all of the following four criteria apply:

1. Quality of work in the course up to that point is C level or above.
2. Essential work remains to be done. "Essential" means that a grade for the course could not be assigned without dropping one or more grade points below the level achievable upon completion of the work.
3. Reasons for assigning an I must be acceptable to the instructor. The student does not have the right to demand an I. The circumstances must be unforeseen or be beyond the control of the student. An instructor is entitled to insist on appropriate medical or other documentation. *In no case is an "Incomplete" grade given to enable a student to do additional work to raise a deficient grade.*
4. A written agreement, signed by both the student and the instructor, should include a statement of the remaining work to be done to remove the I grade, and the date, not to exceed one year from the end of the term of enrollment for the course, by which work must be completed in order to earn credit toward the degree. The instructor may specify the highest grade which may be awarded upon completion; the grade awarded should not exceed the level of achievement attained during the regular course period.

An Incomplete grade becomes part of the permanent transcript record after the deadline expires, unless a retroactive withdrawal is approved by petition to the Graduate Council. To remove an I an instructor must file a supplementary grade report within one year (e.g., by the end of fall 2006 for a course registered for fall 2005).

Withdrawals. Withdrawal from a course must be initiated by the student. It is the student's responsibility to withdraw properly by the deadline dates published in the *Schedule of Classes*.

A student may withdraw with no record on the transcript up to the end of the fourth week of the term. As a courtesy, students are advised to notify the instructor concerned of the intended or completed withdrawal.

A student may withdraw for any reason before the end of the fourth week, but withdrawal between then and the end of the eighth week requires instructor approval. A student withdrawing after the end of the fourth week shall have a W recorded on the transcript.

A student wishing to withdraw after the eighth week must petition the Deadline Appeals Board. A W is recorded if the petition is allowed. Reasons for withdrawal beyond the eighth week must be beyond the student's control, and medical reasons must be documented. Instructor's comments are required on the petition.

Refunds are automatic and are calculated from the date of official course load reduction. The refund is 100 percent only if withdrawal occurs within the first week of the term.

If a student, to the best of the instructor's knowledge, has never attended class, the name on the grading register may be assigned an X grade. An auditor may also be assigned an X for insufficient attendance.

A student who has participated in a course but has failed to complete essential work or attend examinations, and who has not communicated with the instructor, will be assigned an F, a D, or whatever grade the work has earned.

Missing Grade. A student will not be certified for graduation who has any M (Missing) grades in PSU graduate courses that could potentially by letter graded, even if the courses are not applied to the student's degree.

Repeat of graduate courses. If a graduate course is repeated, the grades awarded both times are included in the GPA; however, credit toward the number of credits required for the degree is counted only once. Repeating courses to raise the GPA is not acceptable.

Audit. Graduate students may take any course for which they have the prerequisites and which is open to them on the basis of their admission category on an audit (no-credit) basis. The tuition and fees for auditing courses are the same as for taking the courses for credit, but a student's load (total credit hours) does not include audit enrollments.

Courses taken more than once on an audit basis cannot be repeated for graduate credit. During the add-drop period a student registered for a course for audit may change to credit status or vice versa through the official methods; thereafter the change cannot be made.

Television course credit. Graduate credit earned through enrollment in television courses (closed-circuit TV excepted) will not be acceptable toward an advanced degree, except when approved in advance by the graduate adviser, the department, and the vice provost for Graduate Studies.

Correspondence credit. Under no circumstance will graduate credit earned through correspondence study be acceptable toward an advanced degree.

Academic load. The normal term load for a student devoting full time to graduate study is 12 credits including coursework and thesis. Graduate students must seek approval of registration in excess of 16 credits. A student registering for 17 to 19 credits must obtain the approval of the department chair or faculty adviser. A student registering for 20 credits or more must obtain the approval of the department chair or faculty adviser, the student's academic dean, and the vice provost for Graduate Studies. A graduate assistant registering for more than 16 credits must obtain approval from the department chair and the vice provost for Graduate Studies. Overload approval forms may be obtained from the departments or the Office of Graduate Studies.

Minimum enrollment. The University requires that graduate students who are involved in activities requiring faculty time or the use of University facilities register each term, including those working on any aspects of a thesis or dissertation.

A minimum of one graduate credit is required when taking any comprehensive or final examination. A minimum of one graduate credit of registration is required when engaged in any phase of research, such as developing or collecting data, or any aspects of a thesis or dissertation until its final acceptance is approved by the Office of Graduate Studies.

The student's department can require additional registration in any given term in relation to the amount of time required of faculty or the use of University facilities during the term.

Residence credit. In all cases, a master's student must earn a minimum of two-thirds of the courses applied to the degree *after* formal admission to the graduate degree program at PSU; courses taken at any institution, including PSU, before the term of formal admission to a PSU graduate degree program are *pre-admission* credits. Additionally, a minimum of two-thirds of the courses applied to the degree must be taken at PSU; courses taken at other institutions at any time are *transfer* credits. A minimum of 12 credits in a 45-credit program (or 25 percent of the required credits in a degree program greater than 45 credits) must be taken in residence in 500, 500/600, or 600 course level categories. The remainder of the required credits may be 400/500 courses taken for the 500-level number.

In a doctoral program, a minimum of three consecutive terms must be spent in full-time residence (minimum 9 graduate credits each term) after admission to the doctoral program.

A maximum of 12 graduate credits acquired by an undergraduate student at

Portland State University through the graduate credit reservation procedure will be counted as reserved credits if approved for inclusion in the student's graduate program. Reserved credits are subject to pre-admission limits and requirements.

Residence requirements are intended to ensure that the candidates work in close association with other graduate scholars in the intellectual environment of Portland State University.

Credit distribution and limitations for master's degrees. Limitations are placed on the use of credits in 501, 502, 503, 504, 505, 508, and 509 courses. In a 45-credit program, the limits are as follows: a maximum of 12 credits in 501, 502, and 505 combined; a maximum of 9 credits in 504, 508, and 509 combined; a range of 6 to 9 credits in 503. Courses numbered 60x are included in these limitations.

Courses applied to the degree must be 500 or 600 level. The 700- and 800-level courses are not acceptable in graduate degree programs, with the exception of the master's degree programs in the School of Education as well as some M.A.T./M.S.T. programs; these programs may allow a maximum of 6 credits at the 800 level.

Joint Campus program. Graduate students at Portland State University may, with adviser, instructor, department, and PSU registrar approval, take graduate courses at any of the other institutions in the Oregon University System. A student registers for these courses with the PSU registrar, who records each grade on the academic record under Joint-Campus Course (JC 510/610). The student must be a matriculated graduate student in a PSU advanced-degree program and be registered for PSU credit the same term the JC 510/610 course is taken. Forms are available in the Office of Registration and Records in the lobby of Neuberger Hall. Self-support courses and courses offered by Extended Studies and Summer Session are ineligible for this program.

Pre-admission and transfer credit. Courses taken at any institution, including PSU, before the term of formal admission to a PSU graduate degree program are *Pre-admission* credits. Courses taken at any other institution at any time are *Transfer* credits. In all cases, a master's student must earn a minimum of two-thirds of the credits applied to the degree *after* formal admission to the graduate degree program at PSU *and* must earn a minimum of two-thirds of the credits applied to the degree at PSU. Departments may have stricter limitations.

The application of eligible pre-admission and/or transfer credits to an advanced

degree at PSU must be approved by the student's department and the Office of Graduate Studies. Both pre-admission and transfer credits must be submitted to the Office of Graduate Studies for approval on the GO-21 form (Proposed Pre-admission and Transfer Credit for the Master's Degree). It is strongly suggested that this form be submitted early in the student's program, but it must be submitted and approved before the Office of Graduate Studies can review the Graduate Degree Program form, which is due in the first week of the anticipated term of graduation.

All pre-admission and transfer credits must be letter-graded B- or higher; pass or similar grading methods are not acceptable. All Joint Campus (JC) credits are considered transfer credits. Credit from foreign institutions is subject to the same requirements and limitations; requests for foreign transfer must include additional documentation to facilitate verification of eligibility.

Transfer credits must meet all the following requirements: (1) must be graduate credit taken at an accredited institution and acceptable into graduate academic degrees without qualification at the originating institution; (2) must be letter-graded B- or higher; pass or similar grading methods are not acceptable; (3) must not be used for any other degree at any institution; (4) must not be correspondence credit; (5) must be no older than seven years old at the time the master's degree is awarded; (6) must total no more than one-third of the required credits for the degree program. Television courses and short-term courses are generally not eligible; requests for transfer of these courses require additional documentation and specific approval.

Courses from other institutions approved for graduate transfer credit are not entered on PSU's graduate transcripts and are not considered in the computation of PSU cumulative graduate grade point averages for the purposes of determining continued admissibility and graduation (except they are included in the program GPA, which is calculated on only those courses applied to the degree). The M.S.W. program has specific transfer credit allowances resulting from accreditation requirements and interinstitutional agreements, but a minimum of 45 credits applied to the M.S.W. must be taken at PSU.

Reservation of work for graduate credit. Only credits earned at PSU can be reserved for graduate credit. A Reservation of Graduate Credit form must be filed in the Office of Graduate Studies as early as possible. It must be approved by the department or degree program, the Office of Degree Requirements, and the Office of Graduate Studies. It is strongly suggested

that this be submitted before award of the baccalaureate degree, but it must be submitted and approved before the Office of Graduate Studies can review the Graduate Degree Program form, which is due in the first week in the term of graduation with the master's degree.

Reserved graduate credit is limited to 12 completed and graded graduate credits letter-graded B- or higher earned within the last 45 credits prior to award of the student's first baccalaureate degree and not used to fulfill the requirements for the baccalaureate degree. Such courses are pre-admission credits and subject to all pre-admission requirements and limitations. The department may have stricter limitations.

Dual master's degrees. No credits applied toward a master's degree, once that degree is achieved, may be applied to the earning of another master's degree, except for the special arrangement provided for the dual master's degree program.

In the case of the dual master's degree program, a graduate student may work concurrently toward the completion of the requirements of two PSU master's degrees in complementary disciplines where an overlap of coursework or research (not culminating experience) occurs. The dual degree program is planned in consultation with and approved by the advisers from each program. The courses to be accepted dually for the two degrees shall be determined by the department(s) involved but may not exceed one-third of the required quarter credits for a degree. If the two master's programs have different totals for course credits, the one-third limit is determined by the smaller credit total. To ensure time for adequate planning, applications for admission to the dual degree program are made early in the graduate studies. Admission to the second program in the dual degree program must be attained no later than the term prior to the term in which the final coursework is completed for the first degree. A memo of agreement signed by both advisers and listing the specific courses which will be used for both degrees must be approved by the Office of Graduate Studies before graduation with the first degree. These forms are available in the Office of Graduate Studies, 117 Cramer Hall.

Leave of absence. A student admitted to a graduate program and in good standing may petition for leave of absence for one calendar year. Leave of absence status assures the student a continuation of the student's admission in the program during the period of the leave of absence. Application for leave of absence, endorsed by the department chair or program direc-

tor, must be filed in the Office of Graduate Studies not later than the last day to register for classes in the term for which the application is made. A leave of absence is granted only to graduate students in good standing and does not constitute a waiver of the time limit for completion of the graduate degree at PSU, nor does it extend the regular one-year limit for completion of a course.

A student may petition for a second leave of absence from a graduate program, but approval is required from the department chair or program director and graduate committee of the college or school. Students who have not enrolled for three terms (excluding summer) must submit a re-enrollment request.

Cancellation of admission to graduate program. If a student does not validate admission by registering and paying for at least one credit in the term of admission, that admission will be cancelled unless the student contacts the Admissions Office and requests that the admission be updated to another term within the calendar year. If the student does not validate admission within one calendar year, the admission will be cancelled and the student must submit a new application and a new application fee.

A student with validated admission to a graduate program who during a one-year period (1) does not have an approved leave of absence and (2) does not successfully complete a graduate course in the approved program of study for the degree may have admission to the degree program canceled. For further information, students are urged to contact individual departments for departmental restrictions.

Degree application. Candidates must file a Degree Application with Graduate Studies by the first Friday of the anticipated term of graduation. The degree will not be conferred unless the student has attained a cumulative GPA of at least 3.00 for all graduate credits earned at Portland State, as well as a GPA of at least 3.00 on the courses fulfilling the degree requirements (courses listed on the GO-12 form for master's students); all M (Missing) grades in PSU graduate courses that could potentially be letter graded must be removed before graduation, even if the course is not applied to the student's degree. Departments may establish a more rigorous standard.

Limitations for faculty members. PSU faculty members are encouraged to pursue additional advanced degrees at other institutions. Specifically, faculty members above the rank of instructor are not eligible to receive an advanced degree in their own department or school at the

University; however, in special circumstances, they may earn a degree in a department or school in which they do not hold an appointment.

Academic Standing

All students admitted to graduate studies (regular or conditional; master's, doctoral, graduate certificate) at Portland State University must maintain a GPA of at least 3.00 for all graduate credit earned at Portland State University. All graduate students, especially those in a conditional admission status, are expected to keep in close communication with their departments and to avail themselves of departmental advising.

Academic probation. An admitted student is placed on probation if:

1. The student's cumulative graduate GPA at Portland State University, based on the completion of 9 letter-graded graduate credits after admission to the graduate/postbaccalaureate level at PSU, is below 3.00 at the end of any term, or
2. The student's term graduate GPA, based on a minimum of 6 letter-graded graduate credits, is below 2.67 for a given term.

While on academic probation the student will not be permitted to graduate, to be advanced to doctoral candidacy, to receive approval of the master's degree program (GO-12 form), to receive or continue to hold a graduate assistantship, or to register for more than a total of 9 credits in any term. Removal of academic probation occurs if the cumulative graduate GPA is brought to 3.00 within the next 9 graduate credits in letter-graded courses in the case of probation due to a low cumulative GPA, or both cumulative and term GPA of 3.00 or above in the case of probation due to a low term GPA.

Disqualification. A student who is disqualified may not register for any graduate courses at PSU for at least one calendar year. Disqualification occurs if:

1. The student on academic probation for low GPA fails to achieve a cumulative graduate GPA of 3.00 or higher within the next 9 graduate credits in letter-graded courses; or
2. The student on probation for a term GPA below 2.67 does not receive at least a 3.00 term GPA and does not achieve a 3.00 cumulative GPA within the next 9 credits of letter-graded graduate coursework; or
3. The student becomes subject to academic probation for a second time.

Readmission after disqualification. A disqualified student may petition for readmission as a degree-seeking student in a graduate program after one calendar year.

Readmission after the mandatory one-year period is initiated by the student's filing of a petition for readmission to the Graduate Council through the Office of Graduate Studies. Readmission is not automatic. To be readmitted the student must meet all current admission requirements, with the exception of the graduate GPA.

If the student's graduate program has recommended readmission, the Graduate Council may grant readmission, with or without additional academic requirements, or may recommend continued disqualification. If the Graduate Council approves readmission, the student must submit a *re-enrollment request* to the Office of Admissions. The readmitted graduate student is subject to all University and program requirements in effect at the time of readmission. The student must raise the PSU cumulative graduate GPA to 3.00 or better with 12 credits of letter-graded graduate coursework after readmission, or she/he will be disqualified.

Graduate courses completed at any institution while a student is under disqualification at PSU will not be applied toward a graduate program at PSU.

Academic Honesty

Graduate policy on academic honesty and integrity. Graduate students have a primary, unique relationship and responsibility to the faculty of the academic departments, the faculty upon whose recommendations graduate degrees are awarded. A major feature of the graduate student's responsibilities to the faculty is the adherence to academic honesty. The Graduate Policy on Academic Honesty and Integrity assumes that the student is honest, that all coursework and examinations represent the student's own work, and that all documents supporting the student's admission and graduation are accurate and complete. Academic honesty is a requirement for all graduate activities. Any violation of academic honesty and integrity is grounds for academic action. In addition, a student found in violation of this policy may be subject to disciplinary sanction as provided in the University Student Conduct Code.

Violations of the policy include but are not limited to:

- 1. Cheating in examinations and course assignments.** The willful use or provision to others of unauthorized materials in written or oral examinations or in course assignments.
- 2. Plagiarism.** The appropriation of language, ideas, and products of another author or artist and representation of them as one's own original work; failure to provide proper identification of source data; use of purchased or borrowed papers in

graduate courses without complete identification of the source.

3. Selling or offering to sell course assignment materials. Selling or offering to sell material to another person; knowing or under circumstances having reason to know, that the whole or a substantial part of the material is intended to be submitted in fulfillment of a course requirement.

4. Academic fraud. Furnishing false or incomplete information to the University with the intent to deceive; forging, altering, or misusing University documents or academic forms which serve as the basis for admission, course study, or graduation; misrepresenting a person's identity to an instructor or other University official.

Graduate Council

This council recommends policies and standards for graduate courses and programs and coordinates all graduate activities of instructional units and programs. It develops and recommends University policies, establishes procedures and regulations for graduate studies, and adjudicates petitions regarding graduate regulations.

Procedures for allegations of violation of graduate policy on academic honesty and integrity. Allegations of violation of the graduate policy on academic honesty and integrity not resolved within the department (or appropriate academic unit) shall be submitted to the vice provost for Graduate Studies. At this point in the process, the dean is empowered to attempt to resolve the case and not forward the case to the Graduate Council. If the dean, with appropriate consultation, and the student concur in the case's disposition, such disposition will be imposed. If the dean is unable to resolve the case, the dean shall provide formal written notification to the student of

- ◆ the charges;
- ◆ the student's right to request a formal hearing to contest the charges;
- ◆ the student's right to waive the formal hearing by utilizing the student petition process (see paragraph below); and
- ◆ the requirement that the student's request for a formal hearing or to file a petition be submitted in writing to the dean within 10 business days of the date of this written notification. If the student does not respond within this time period, the dean shall refer the matter to the Graduate Council for decision by default, based upon the information and records in the file, without further participation by the student. Upon referral to the Graduate Council, the council chair shall review the file and submit a written determination for final consideration by the council.

If the petition option is selected by the student, the student will complete a written petition to the vice provost for Graduate Studies that includes the student's own written statement, with attached supporting documentation, and the specific action requested of the Graduate Council. The Office of Graduate Studies shall request a written statement from the faculty member(s) and/or administrative personnel who have advanced the case of alleged violation of academic honesty and integrity. Consistent with existing Office of Graduate Studies procedures for the review of student petitions, at least two members of the Graduate Council will review the petition independently and each will submit their decision to approve or deny the student's requested action. Then, the Graduate Council chair will review both the student's petition and the decisions made by the Graduate Council members. The Graduate Council chair will approve or deny the student's request, or invoke an alternative disposition, indicating the findings of fact and evidence used to arrive at the decision. The Graduate Council chair's decision is final. It is reported to the vice provost for Graduate Studies, who provides written notification to the student of the chair's decision.

If the student requests a formal hearing instead of exercising the petition option (see paragraph above), the dean shall refer the matter to the Graduate Council chair, who will convene a hearing panel under the following procedures. The Graduate Council chair shall appoint a hearing panel from among its members and designate one of the appointed members to serve as the panel's chair. The hearing panel will be comprised of at least three but no more than five members. If there are graduate student members serving on the Graduate Council, the council chair shall invite one graduate student member to serve on the hearing panel. The council chair, in consultation with the panel chair, shall notify all involved parties of the date, time, and place for the hearing and provide a list of hearing panel members, in advance of the hearing, to permit objections to be heard regarding the appointment of any particular panel member(s). Prior to the hearing, all involved parties are encouraged to submit written arguments and corroborating documents to the hearing panel chair.

The dean, with assistance from the original complainant, and with advice and assistance from the Oregon Department of Justice, shall advance the case before the hearing panel. The student shall have the right to be represented (at the student's own expense) by counsel. The dean may elect to have the Department of Justice

present the matter. At the panel hearing, all involved parties shall be given the opportunity to present further oral and written arguments and to have witnesses called. Opportunity shall be provided for witness cross-examination. Testimony shall be presented upon oath or affirmation and a verbatim record of the hearing kept.

The hearing panel shall deliberate in private and produce a written decision, including the findings of fact and evidence relied upon to reach its decision. The administration has the burden of proving the allegations. Findings shall be based upon a preponderance of the evidence. If the hearing panel concludes that a violation of graduate policy on academic honesty and integrity occurred, the following constitute academic actions which the hearing panel may take:

- ◆ denial or rescinding of credit for the course in which the violation occurred;
- ◆ academic probation for a period of one calendar year;
- ◆ academic disqualification for a period of one to three calendar years;
- ◆ denial or rescinding of the award of the graduate degree.

In the event that the hearing panel is unable to reach a consensus decision, the hearing panel will submit its majority and minority report at the next scheduled Council meeting for deliberation and vote by the entire Graduate Council. A consensus decision, reached by the hearing panel and ratified at a subsequent council meeting, is final.

Upon receipt of the Graduate Council's decision, or the council chair's decision in the case of a petition, the vice provost for Graduate Studies will impose whatever academic sanction is included in the decision. If an academic sanction is imposed, the dean will also forward all materials gathered in the case to the Office of Student Affairs, which may choose to act under the auspices of the Student Conduct Code.

Tuition, fees, and aid

Basic Graduate Fees

The basic fees associated with graduate study at PSU are listed in the following table. The admission application fee is required and is nonrefundable. For many of the graduate degree programs, the applicant is required to submit a recent test score on one or more of the designated standardized tests. The graduate tuition fees depend on the total number of credits in enrolled classes, resident or nonresident status in the state of Oregon, and the student's status as graduate assistant or non-

graduate assistant. Further details on graduate fees are available by contacting the Office of Admissions, Registration and Records, 113 Neuberger Hall.

Tuition and fees may be paid in full at the time of registration; however, the University offers a deferred tuition plan which allows for a partial payment at registration with the balance due in two installments.

Admission application fee (nonrefundable)\$50.00
Application for graduation (per degree or graduate certificate)\$20.00
Validation of out-of-date graduate credit (per course)\$50.00

Tuition (Spring 2006)

Oregon residents

8 credits\$2,040.50
Full time (9 credits)\$2,444.50
Each additional credit\$231.00

Nonresidents

8 credits\$2,040.50
Full time (9 credits)\$4,001.50
Each additional credit\$404.00

Microfilming

Dissertation (required)\$55.00
Thesis (optional)\$45.00
Copyrighting (optional)\$45.00

Transcript

Official (per copy)\$4.00
Catalog\$6.00

Note: All tuition and fee costs listed above are accurate as of January 1, 2006, and are subject to change by the Oregon University System or the independent institutions involved.

Financial Assistance

Graduate assistantships. The University offers graduate assistantships for teaching or research on a competitive basis for students working toward advanced degrees in most areas. To qualify and to remain eligible for an appointment, a student must be admitted to regular or qualified status and be in good academic standing in a graduate degree program at PSU. Graduate assistants must be registered for and satisfactorily complete a minimum of 9 graduate academic credits each term the assistantship is in effect, except Summer Session, with term and cumulative GPAs of 3.00 or higher, and must show satisfactory academic progress in fulfilling the requirements of the degree program. The student's department chair or graduate coordinator may allow up to 4 undergraduate credits within the 9 credits if the undergraduate credits are needed as prerequisites for graduate courses or are important to the student's plan of study. Any request for a student to take more than 4 undergraduate credits per term must be approved by the vice provost for Graduate Studies. Graduate assistants are provided a salary on a regular periodic basis as compensation for the service provided and receive a partial remission of the instructional fee portion of tuition each term of appointment. Students wish-

ing to apply for graduate assistantships must correspond directly with the appropriate academic department chair. The Office of Graduate Studies does not award graduate assistantships.

PSU Laurels. The PSU Laurels Graduate Tuition Remission Program provides remission of the instructional fees at in-state rates to academically qualified students on a competitive basis with preference given to Oregon residents. The tuition remissions are available to admitted graduate students, both full time and part time, at Portland State University. The PSU Laurels is a merit program; financial need is also a consideration for some of the awards. The application deadline is April 15 for the following year. Information will be available after March 1 from the Office of Graduate Studies in 117 Cramer Hall.

Scholarships. Portland State University has a limited number of scholarships available to graduate students. Scholarships are awarded to students in attendance at the University on the basis of academic achievement, promise, and financial need.

A computerized data base of scholarships, both national and local, is available on the second floor of the library. Requests for information on scholarships related to specific departments should be made to the specific department involved.

Educational loans and work. Graduate students may apply for educational loans through the Federal Perkins Student Loan program, the Federal Direct Stafford Loan program, the Federal Unsubsidized Stafford Loan program, and the federal College Work-Study Program. Details and application materials are available from the Office of Student Financial Aid in the lobby of Neuberger Hall. Priority consideration for Federal Perkins Student Loan and federal College Work-Study will be given to those who have completed the application process earliest, while funds are available.

WICHE. Under the Western Interstate Commission for Higher Education (WICHE) Regional Graduate Program agreement, residents of Alaska, Hawaii, Idaho, Montana, Nevada, New Mexico, Utah, Washington, and Wyoming admitted to the following programs pay resident fees: the master's and doctoral programs in environmental sciences and resources; the master's program in education: special education with a focus in visually impaired learners; master's and doctoral programs in urban studies; or the doctoral program in public administration and policy. Applications are available through the Office of Graduate Studies.

Graduate programs

The advanced programs offered by Portland State University are listed below.

GRADUATE CERTIFICATES

A graduate certificate program is a linked series of approved graduate-level courses which constitute a coherent body of study with a specific defined focus within a discipline. It is designed for a postbaccalaureate participant and reflects the educational mission of the University. Each graduate certificate program is approved by the Graduate Council and the Faculty Senate with a minimum number of credits and a specific set of courses which must be completed; a final project or portfolio may be required to provide for integration of the sequence of course materials.

Students must be admitted to the graduate certificate program by the University and must meet standards for admission to allied graduate degree programs (master's or doctoral level programs). All graduate certificate applicants must have an accredited baccalaureate degree. Applicants with an undergraduate GPA of at least 2.75 are eligible for regular admission with the agreement of their graduate certificate program; applicants with an undergraduate GPA lower than 2.75 but at least 2.50 are eligible for conditional admission at the discretion of their program. Applicants with 9 or more graduate credits must have a cumulative graduate GPA of at least 3.00, and this GPA supersedes the undergraduate GPA. Programs may specify additional requirements, including higher minimum GPA requirements.

Graduate certificate students must remain in good academic standing (see page xx) and must achieve a cumulative GPA of 3.00 or higher in all courses to be used for the graduate certificate.

Courses and certificates completed will be transcribed by the University Registrar as a part of the student's permanent University record. Certificates may be awarded at the end of any term when the requirements have been met. Students must apply for award of the certificate in the Office of Graduate Studies no later than the first week of the term in which completion is expected.

Courses completed up to seven years prior to the certificate award date may be used to satisfy graduate certificate requirements (i.e., a course started in the fall term of 2000 will be beyond the seven-year limitation at the close of fall term 2007). Courses completed for a graduate degree program may be applied to completion of a graduate certificate program. Degree credits earned in fulfillment of a graduate certificate program may be applied to a

graduate degree program, provided they meet the appropriate standards for use in the degree (including acceptable grade and completion within seven years of the degree award date for the master's degree).

For graduate certificates only, transfer credit is defined as any graded (B- or higher) graduate course taken at another accredited institution. Two-thirds of the credits required for a graduate certificate, or 15 credits, whichever is higher, must be taken at PSU. Individual programs may set higher minimums.

The following graduate certificate programs are currently offered (additional programs are in the process of approval): addictions counseling; marriage, couples, and family counseling (Special and Counselor Education); analog and microwave circuit design; communication systems; computer architecture and design; design automation; digital design; digital signal processing; image processing; integrated circuit test, verification, and validation (Electrical and Computer Engineering); computer security (Computer Science); geographic information systems (Geography); applied statistics; mathematics for middle school mathematics teachers (Mathematical Sciences); children's and young adult literature (Curriculum and Instruction); computational intelligence; computer modeling and simulation (Systems Science); earth and space sciences for K-12 educators; engineering geology; environmental geology; hydrogeology (Geology); hydrology (Environmental Sciences and Resources); gerontology (Urban Studies and Planning); systems engineering fundamentals (Systems Engineering); food marketing and logistics (Business Administration); transportation (Civil and Environmental Engineering and Urban Studies and Planning); and real estate development (Urban Studies and Planning).

Application materials and program requirements are available from the departments offering these programs or from the Graduate Studies Web site at www.gsr.pdx.edu.

MASTER OF ARTS AND MASTER OF SCIENCE (M.A. AND M.S.)

Anthropology (M.A. only); biology; chemistry; civil and environmental engineering; computer science (M.S. only); communication; conflict resolution; criminology and criminal justice (M.S. only); economics; education (with options in counseling; curriculum and instruction; educational policy, foundations, and administrative studies; media/librarianship; special education); electrical and computer engineering (M.S. only); engineering management (M.S. only); environmental sciences and resources (M.S. only); English (M.A. only); financial analysis (M.S. only); foreign languages (M.A. only) with options in French, German, Spanish, and Japanese; foreign literature and language (M.A. only); geography; geology (with an option in geohydrology); health studies; his-

tory (M.A. only); interdisciplinary studies; mathematics; materials science and engineering; mechanical engineering; physics; political science; psychology; sociology; speech and hearing sciences; statistics; systems science (M.S. only); TESOL (M.A. only); theater arts; writing.

The University offers programs leading to the Master of Arts and the Master of Science as shown in the Graduate Degrees section. In all programs leading to these degrees, the primary emphasis is placed upon the student's scholarly development through formal coursework, seminars, research, and independent study. The programs are designed to develop a mastery of subject matter in a chosen discipline and to provide training and experience in research.

Candidates for the Master of Arts and Master of Science degrees must earn a minimum of 45 credits in approved graduate courses; many programs have higher minimums, up to 90 credits. A thesis may be required, depending on the program. The Master of Arts degree requires a demonstrated proficiency in one or more foreign languages. Foreign language proficiency is not required for the Master of Science degree. Programs of study are built upon appropriate baccalaureate preparation and include a major discipline; if a thesis is included in the program of study, the discipline and thesis represent the major portion of the program of study.

Applicants for admission must meet the University requirements for admission to graduate study. For further information on admission, as well as other aspects of a specific master's degree, the appropriate department should be contacted directly.

MASTER OF ARTS IN TEACHING AND MASTER OF SCIENCE IN TEACHING (M.A.T. AND M.S.T.)

English (M.A.T. only); general arts and letters; environmental science; science; general social science; mathematics; music.

For students interested in specializing in a particular teaching field at the secondary level, the Master of Arts in Teaching (M.A.T.) and/or the Master of Science in Teaching (M.S.T.) are offered in the following fields: English (M.A.T. only), general arts and letters, science, environmental science, general social science, mathematics, and music.

The fundamental purpose of the M.A.T. and M.S.T. programs is the improvement of the quality of teaching in the schools. To this end, the programs are developed and administered within flexible guidelines to match the needs of students with varying backgrounds and professional plans. The programs permit the prospective or in-service teacher to work toward satisfying the requirements for a teaching certificate if desired and, in addition, to devote a substantial portion of the program of study to coursework in selected academic fields.

All M.A.T. degrees require a demonstrated proficiency in at least one foreign language. Foreign language proficiency is not required for the M.S.T. degree.

In general, admission requirements are equivalent to admission requirements for the M.A. and M.S. degrees.

A minimum of 45 graduate credits is required. The program of study includes the following:

1. At least 24 graduate credits must be devoted to selected courses in academic fields which strengthen the candidate's scholarship in a teaching field and related area. This minimum may be higher at the department's discretion. At least 12 credits in residence at PSU at the 500, 500/600, or 600 level must be completed successfully. The remainder of the required courses may be 400/500 courses taken for the 500-level number.
2. At least 9 credits of courses in education are required.
3. A final written examination covering the academic teaching field and professional education courses is required.
4. A final oral examination is required of all students except in music and math M.S.T. programs.

Information on admission and other aspects of a program may be obtained by contacting the department identified with the field of interest.

PROFESSIONAL DEGREES

Master of Business Administration (M.B.A.), with options in management of innovation and technology, finance, and international business; Master of Education (M.Ed.); Master of Engineering (M.Eng.), in civil and environmental engineering, civil engineering management, electrical and computer engineering, manufacturing engineering, mechanical engineering, project management, systems engineering, technology management; Master of Environmental Management (M.E.M.); Master of Fine Arts (M.F.A.), in studio art; Master of International Management (M.I.M.); Master of Music (M.M.), with options in performance and conducting; Master of Public Administration (M.P.A.), with an option in health administration; Master of Public Health (M.P.H.), a joint program with Oregon Health & Science University and Oregon State University, with options in health education/health promotion and health administration and policy; Oregon Master of Software Engineering (O.M.S.E); Master of Social Work (M.S.W.); Master of Urban and Regional Planning (M.U.R.P.); Master of Urban Studies (M.U.S.).

DOCTOR OF PHILOSOPHY (PH.D.)

Applied psychology; biology; civil and environmental engineering; computer science; electrical

and computer engineering; environmental sciences and resources (with options in biology, chemistry, civil engineering, economics, geography, geology, and physics); mathematics education; mathematical sciences; public administration and policy; social work and social research; systems science (with options in anthropology, business administration, civil engineering, economics, engineering management, mathematics, mechanical engineering, psychology, and sociology); urban studies.

The Doctor of Philosophy degree is awarded for scholastic achievement based upon the candidate's proven comprehensive knowledge in a recognized specialized field of study and for creative scholarship through independent research. Judgment of such attainments is based upon evaluation of a dissertation grounded in independent research and the passing of prescribed written and oral examinations.

All doctoral students must fulfill the residency requirement by attending a minimum of three consecutive terms of full-time approved graduate study at PSU (at least 9 credits per term) after admission to the doctoral program.

Doctor of Philosophy programs consist of formal coursework, guided individual study in a chosen field or discipline, study in cognitive areas, and original research which serves as the basis for a scholarly dissertation. Before being admitted to candidacy for the Ph.D. degree, each student must pass written comprehensive examinations; some programs also require demonstrated competency in at least one foreign language. Advancement to candidacy for the Doctor of Philosophy degree requires, among other prerequisites, certification by the responsible program coordinator/director that specified coursework has been or will be completed and that the proposed research can be adequately supported and directed. The vice provost for Graduate Studies retains final approval authority for advancement to candidacy.

In addition to the general University admission and degree requirements, each doctoral program has special requirements and/or policies concerning admissions and awarding of the Ph.D. degree. Information on specific admissions requirements, procedures, and other aspects of the program can be obtained from the following: dean, Maseeh College of Engineering and Computer Science: director, Biology Doctoral Program; Civil and Environmental Engineering Doctoral Program, Computer Science Doctoral Program, and Electrical and Computer Engineering Doctoral Program; director, Environmental Sciences and Resources Doctoral Program; director, Mathematics Education Doctoral Program; director, Mathematical Sciences Doctoral Program; director, Applied Psychology Doctoral Program; director, Social Work

and Social Research Doctoral Program; director, Systems Science Doctoral Program; and dean, College of Urban and Public Affairs: Urban Studies Doctoral Program and Public Administration and Policy Doctoral Program.

DOCTOR OF EDUCATION (ED.D)

In educational leadership; administration; post-secondary education; curriculum and instruction; special and counselor education.

The Doctor of Education degree is granted in recognition of mastery of theory, practice, and research in education. The criteria for the award of the degree are the candidate's demonstrated comprehensive knowledge of designated fields of concentration and specialization and the successful presentation and defense of a dissertation embodying the results of original investigation which demonstrates the candidate's ability to conduct independent investigation. The dissertation is a contribution to knowledge or a constructive result of significance and value for educational practice. In addition to the area of specialization, which includes the leadership core and the specialty studies core, the student's program of study includes work in related fields outside education and the use of systematic inquiry leading to the dissertation.

All doctoral students must fulfill the residency requirement by attending a minimum of three consecutive terms of full-time approved graduate study at PSU (at least 9 credits per term) after admission to the doctoral program. For the Ed.D., these approved graduate credits may be coursework, the study of practice (i.e., field-based work), or dissertation credits. Foreign language competency is not required for the Ed.D. degree. The equivalent of three years of full-time study beyond the baccalaureate is required.

The Ed.D. in educational leadership program prepares highly qualified professional educators for positions in teaching, supervision, and administration in elementary and secondary education, in community and four-year colleges and universities, and in other educational institutions, both public and private.

Information concerning admission requirements, procedures, and other aspects of the program can be obtained from the dean, Graduate School of Education.

Degree requirements

MASTER'S DEGREE

Prior to the completion of 18 credits, the degree student prepares a program of study with the assistance of the faculty adviser. The purpose of the planned program of study is to present an organized,

individualized plan for coursework, practica, and research activities consistent with the requirements for the proposed degree and approved by the faculty adviser. Successful completion of the program of study should demonstrate a high level of academic and professional performance required in the graduate specialization.

The final, approved program of study must be received in the Office of Graduate Studies not later than the first week of the anticipated term of graduation.

Language requirement. The language requirement for M.A. and M.A.T. students must be passed before the student's program (GO-12) or committee can be approved and before final exams can be taken.

Options for meeting the graduate foreign language requirement for M.A. and M.A.T. students. The Department of Foreign Languages and Literatures will accept the following ways of satisfying the graduate foreign language competency requirement:

1. Equivalent coursework: Students who have passed a course equivalent to PSU level 203 or higher in a foreign language within the four years prior to their admission into their PSU graduate program will be deemed to have met the language requirement. The Department of Foreign Languages and Literatures will issue a certificate of completion upon evaluation of the student's academic record. M.A. and M.A.T. students are responsible for making their academic records available to the chair of that department in the first term of admission and requesting evaluation and certification.

2. Students who do not meet the requirement under 1. above should make an appointment with the Department of Foreign Languages and Literatures during the first term after their admission to make an individualized plan for the completion of their language requirement. Options include preparing for and passing one of these evaluations:

- a. Oral proficiency interview (mandatory for M.A. TESOL students if they do not take a course at level 203 or above)
- b. A written test (mandatory for M.A. TESOL students if they do not take a course at level 203 or above), such as
 - i. The Graduate Student Foreign Language Test
 - ii. The CLEP exam
 - iii. A special exam, administered by the Department of Foreign Languages and Literatures

c. Coursework after admission: taking a course at level 203 or above

d. Overseas intensive courses or other intensive courses

e. Special reading courses, if available.

The Department of Foreign Languages and Literatures will teach and test only in languages in which it has expertise.

However, off-campus arrangements may be possible with the cooperation of other institutions. Certification of having passed a foreign language examination from an institution other than Portland State University must be approved by the Department of Foreign Languages and Literatures at Portland State University prior to acceptance as fulfillment of the University's master's degree foreign language competency requirement.

A student whose native language is not English may meet the foreign language requirement in English, except for students in two programs: (1) students in the M.A. in French, Spanish, or German, who must be tested in a language other than English and other than the language of their M.A. program; and (2) students in the M.A. in Foreign Literature and Language, who are required to demonstrate fluency in two foreign languages other than English at the time of admission and are not required to demonstrate additional competency except as necessary to complete their degree requirements.

For M.A. TESOL students only, a student whose native language is not English will meet the written requirement (2.b., above) by achieving a TOEFL score of 600 or higher and will meet the oral requirement (2.a., above) by passing a LING 500-level course with a grade of B or better.

Final examination. If a final examination is required by the student's major department, it shall be taken after successful completion of any required foreign language examination and after at least 30 credits have been completed. The examination is not a re-examination over coursework but rather a test of the candidate's ability to integrate material in the major and related fields, including the work in any thesis or research project.

If a final oral examination is required, it may be scheduled only during the regular sessions and no fewer than two weeks before the close of the term of graduation (i.e., must be completed one full week before the beginning of finals week). If a thesis is being presented, the required oral examination (thesis defense) must be scheduled no later than five weeks prior to

the close of the term in which the degree will be granted. For summer term graduation, deadlines apply to the regular eight-week Summer Session dates (i.e., oral exams must be completed by the end of the sixth week of Summer Session); later completion will result in fall term graduation.

When a thesis is presented, the final oral examination is conducted by a committee of at least three and not more than five faculty members, including the candidate's adviser as chairperson and a representative of the Office of Graduate Studies who is appointed by the vice provost for Graduate Studies. The chair of the examination committee and the Graduate Office representative must be regular, full-time PSU faculty, tenured or tenure-track, assistant professor or higher in rank; the other committee members may include adjunct faculty. If it is necessary to go off-campus for one additional committee member with specific expertise not available among PSU faculty, a CV for that proposed member must be presented; that member must be in addition to the required three PSU faculty members. All committee members must have master's degrees.

In the case of a non-thesis oral examination, the committee shall consist of at least two members of the student's department, including the candidate's adviser. At the discretion of the department, a faculty member from another department may be added; that member would be selected by the adviser, the department chair, or the departmental graduate committee chair, according to department policy. For M.A.T. and M.S.T. candidates, one member of the committee is required to be added from the Graduate School of Education.

The chairperson of the final oral examination committee will schedule the time and place of the examination after agreement has been reached among all members and the candidate. All committee members or alternates approved by the vice provost for Graduate Studies must be present for the final oral examination. The final examination is open to the University faculty. Passing of the final oral examination requires a majority approval. In case of failure of the final oral examination, the department has the option of disqualifying the candidate from the master's program or permitting the candidate to appear for re-examination after a period of at least three months. The result of the second examination is final.

If a final written examination is required, the student must pass all sections of the

examination. If the student fails the entire examination or any section thereof, the department may dismiss the student from the degree program, or permit the student to repeat the entire examination, or the section that was failed, after a minimum of three months. The result of the second examination is final.

Human Subjects Research Review

Committee. All research involving human subjects conducted by faculty, staff, or students in any program at PSU must have prior approval of the Human Subjects Research Review Committee. This policy, established by the Office of the President of Portland State University, applies to all research under the auspices of the University, including surveys and questionnaires, whether supported by grant, contract, gift, University, or personal funds. Even if a student's research is exempt from full Human Subjects Research Review Committee review, the student must still file an application with the HSRRC. The decision to waive review is made by the HSRRC chair or a designated member of that committee. HSRRC applications may be obtained from the Office of Research and Sponsored Projects in 111 Cramer Hall. The student should allow a minimum of six weeks for the approval process.

Thesis. The presentation of a thesis as partial fulfillment of the requirements for the master's degree is required in certain departments. If a thesis is presented, the student must register for 6 to 9 thesis credits in the appropriate department. Final grades for thesis credits are not recorded until the thesis has been approved by the Office of Graduate Studies. IP is the interim grade reported. When the thesis is required, it becomes a major factor in determining the eligibility of the candidate for the degree. Each school, college, and department defines the nature of research and scholarship accepted for a thesis, but in all cases a high level of resourcefulness, productivity, and mature perception of the discipline is expected. The quality of the culminating work must meet University standards and reflect those of other leading universities.

The subject of the thesis must be within the major field of the candidate. Although the thesis is not required to show original results, it must reveal independent investigation, including the knowledge and application of the accepted methods of scholarship and research methodology. The thesis represents the independent work of the candidate for the degree and must be developed under the direction of a faculty

member approved for graduate instruction. The student must be registered for at least one graduate credit in every term in which the student is working on any phase of thesis, including data development or collection, writing, revision, defense, and finalization through approval by the Office of Graduate Studies.

Three copies of the thesis (unbound), prepared in accordance with the University's *Information Regarding Thesis Approval*, and four copies of an abstract of not more than 350 words must be filed with the Office of Graduate Studies not later than three weeks prior to the close of the term in which the degree will be granted. Deadlines for each term are available in the Office of Graduate Studies. Two copies of the thesis will be bound by the Library. The third copy will be forwarded to the major department. Students are strongly encouraged to bring a copy of their entire thesis to the Office of Graduate Studies for review before final copies are made.

Thesis in absentia. With the written approval of the department or program chair, the vice provost for Graduate Studies may authorize the thesis to be prepared in absentia. The student must register at Portland State University at the beginning of each term and conduct the research under the direction of the thesis adviser.

Microfilming. The University subscribes to the services offered by University Microfilms International, enabling degree candidates to have master's theses microfilmed and abstracts published in the Master's Abstracts. The microfilm agreement form and further information may be obtained from the Office of Graduate Studies. It is not required that master's theses be microfilmed. Upon the recommendation of the department chair, however, selected theses may be accepted for microfilming. In such cases an abstract of not more than 150 words must be submitted to the Office of Graduate Studies with the microfilm agreement form. The charge for this service is \$45, payable at the Cashier's office after picking up the necessary forms in the Office of Graduate Studies.

Missing Grades. A student will not be certified for graduation who has any M (Missing) grades in PSU graduate courses that could potentially be letter graded, even if the courses are not applied to the student's degree.

Time limitation. All coursework submitted for the master's degree program approved by the department must be completed within the seven years prior to the awarding of the degree (e.g., a course

started in the fall term of 2000 will be beyond the seven-year limitation at the close of fall term 2007). The formal application for the degree must be filed with the Office of Graduate Studies no later than the first week of the anticipated term of graduation. Deadlines for each term are available in the Office of Graduate Studies.

Validation of out-of-date graduate credit.

A PSU course more than seven years old at the time of graduation, but no more than ten years old at the time of graduation, may be used toward master's degree requirements after a successful validation exam (for example, a course taken in fall 1997 may be validated for a graduation term no later than fall 2007). A separate validation examination must be given for each course, in accordance with the full requirements listed on the GO-15 form, available in the Office of Graduate Studies (117 Cramer Hall). Departments are expected to limit validation examinations to those courses that are current and relevant in the discipline and meet the current requirements of the master's degree program. Validated courses are limited to one-third of the program requirements (i.e., 15 credits total in a 45-credit program). Each examination attempted, regardless of result, has a fee of \$50.00, which will be credited to the department giving the exam.

In very unusual cases, with the specific agreement of both the student's department and the department most equivalent to the original course department, a student may validate a graduate course from another accredited institution, in accordance with the full requirements listed on the GO-15 form.

DOCTORAL DEGREE

Advisory committee. An advisory committee for the doctoral degree student shall consist of at least three faculty members representative of the student's field of study. When a student enters the doctoral program, a faculty adviser shall be designated by the program director to advise the student and to meet in regular consultation concerning the program of studies and research. The additional members of the advisory committee shall be appointed after successful completion of 9 credits and not later than six months prior to the completion of the comprehensive examinations.

Residence requirements. A minimum of three academic years of satisfactory graduate study beyond the baccalaureate is required. A minimum of three consecu-

tive terms must be spent in full-time residence, with registration for and successful completion of 9 or more graduate credits each term, after admission to the doctoral program at Portland State University. Summer term may be included (i.e., spring, summer, fall 2006) or excluded (i.e., spring 2006, fall 2006, winter 2007) in calculating consecutive terms.

Language requirement. For the Ph.D. degree, the student may be required to demonstrate competency in at least one foreign language. This requirement is determined by the governing unit of the student's program, department, or school. Any foreign language requirement must be completed before the comprehensive examinations.

Early in the doctoral program the student may be required to take preliminary examinations. The scope and content of the examination, and the standard of performance, shall be determined by the department concerned.

Comprehensive examination. Before advancement to candidacy and not less than one academic year before all requirements for the doctoral degree are expected to be completed, the student must pass a series of comprehensive examinations in the field of specialization. The examinations may be written, oral, or both. The comprehensive examinations may not be taken until the language requirement, if any, and substantially all the coursework for the degree have been completed.

Advancement to candidacy. After passing the comprehensive examination and the identification of the dissertation problem, and after the student completes a preliminary draft for approval from the Human Subjects Research Review Committee, a dissertation committee—consisting of the dissertation adviser, a minimum of three and a maximum of five additional faculty from the doctoral program, plus the representative of the Office of Graduate Studies—shall be formed to take the place of the advisory committee. At this time the faculty adviser is superseded by the dissertation adviser. The chair of the dissertation committee and the Graduate Office Representative must be regular, full-time PSU faculty, tenured or tenure-track, assistant professor or higher in rank; the other three committee members may include adjunct faculty. If it is necessary to go off-campus for one *additional* committee member with specific expertise not available among PSU faculty, a curriculum vitae (CV) for that proposed member must be presented. All committee members

must have doctoral degrees. A written dissertation proposal shall be presented to the dissertation committee for discussion, evaluation, and suggested modifications. No proposal defense shall be valid without a dissertation committee approved by the Office of Graduate Studies. The final proposal submitted to the committee for approval should be sufficiently detailed and clear to provide a blueprint for the study to follow. The proposal is expected to include the following:

1. General nature and present status of knowledge of the problem.
2. The theoretical and empirical framework within which the proposed problem exists.
3. The significance of the proposed research and its likely contributions.
4. The research methodology to be used.

When the dissertation committee has approved the proposal, the student revises the HS draft and submits it to the HSRRC office (111 Cramer Hall) for approval. The doctoral program recommends the student for advancement to candidacy once HS approval has been granted. Changes in the original proposal are permitted, but the student is expected to provide a sufficiently complete formulation of the proposal before approval and to keep modifications to a minimum. All major modifications of the approved dissertation proposal must be reviewed and approved by the dissertation committee and the Human Subjects Research Review Committee. If the student has not satisfied the residency requirement by the time of advancement to candidacy, a plan for doctoral residency must accompany the program's recommendation for advancement. The vice provost for Graduate Studies retains final approval authority for advancement to candidacy.

Human Subjects Research Review Committee. All research involving human subjects conducted by faculty, staff or students in any program at PSU must have prior approval of the Human Subjects Research Review Committee. This policy, established by the Office of the President of Portland State University, applies to all research under the auspices of the University, including surveys and questionnaires, whether supported by grant, contract, gift, University, or personal funds. Even if a student's research is exempt from full Human Subjects Research Review Committee review, the student must still file an application with the HSRRC. The decision to waive review is made by the HSRRC chair or a designated member of the HSRRC. The student should allow a minimum of six weeks for the approval process.

Dissertation presentation. With guidance of the dissertation committee, the candidate shall present a dissertation written in acceptable form setting forth the results of original and independent investigation. The dissertation must constitute a contribution to knowledge, significantly enlarging, modifying, or reinterpreting what was previously known. The candidate is expected to register for dissertation and the related research for a minimum of one full-time academic year. Until the degree is granted, the student enrolls for the number of credits appropriate to the amount of University services utilized, as determined by the dissertation adviser, with a minimum of one credit each term. Ph.D. students must register for a minimum of 27 hours of dissertation (603) credits before graduation; Ed.D. students must register for a minimum of 18 hours of dissertation (603) credits before graduation. A minimum continuing enrollment of one graduate credit is required through the term a student graduates. The dissertation must be prepared in accordance with the University's *Information Regarding Dissertation Approval*, available in the Office of Graduate Studies.

Microfilming. Portland State University subscribes to the services offered by University Microfilms International, enabling degree candidates to have their doctoral dissertations microfilmed and abstracts published in the Dissertation Abstracts International. Microfilming is mandatory for doctoral candidates. An abstract, not to exceed 350 words, must be submitted to the Office of Graduate Studies with the microfilm agreement form. The charge for this service is \$55, payable at the Cashier's office, after picking up the necessary forms in the Office of Graduate Studies. Doctoral students may wish to copyright their dissertations. The charge for this optional service is \$45.

Final oral examination. After tentative approval of the dissertation, the candidate's dissertation committee, including the representative of the Office of Graduate Studies, shall conduct a final oral examination, which may be scheduled only during the regular sessions or during the eight-week Summer Session. The final examination shall not be given until coursework and residence requirements have been completed. The final defense of the dissertation may be held no later than five weeks prior to the conferring of the degree. For summer term graduation, deadlines apply to the regular eight-week Summer Session

dates; later completion will result in fall term graduation. The final doctoral oral examination, which is open to the public, is the culminating experience in the doctoral studies. The candidate is expected to prepare and present orally a formal statement on the research methodology and results. The oral presentation should not exceed 30 minutes. Following the oral presentation, the candidate must defend the dissertation as a worthy contribution to knowledge in its field and must demonstrate a mastery of the field of specialization as it is related to the dissertation. The questioning and discussion are for the purpose of: (1) further enlightenment of the candidate and the committee of the significance and limitations of the research, and (2) demonstration that the candidate has met the high expectations of the University for the award of the doctoral degree.

All committee members or alternates approved by the vice provost for Graduate Studies must be present for the final examination. For dissertation approval there may be no more than one dissenting vote on the doctoral final examination. If the final oral examination is not satisfactory, the advisory committee may recommend that the vice provost for Graduate Studies permit the candidate to take another oral examination after a period of further study. The results of the second exam are final.

Dissertation in absentia. With the written approval of the doctoral program chair, the vice provost for Graduate Studies may authorize the dissertation to be prepared in absentia. The student must register at Portland State University at the beginning of each term and conduct the research under the direction of the dissertation adviser.

Missing Grades. A student will not be certified for graduation who has any M (Missing) grades in PSU graduate courses that could potentially be letter graded, even if the courses are not applied to the student's degree.

Time limitation. A doctoral candidate has a minimum of four months and a maximum of five years from the effective date of advancement to candidacy to complete all requirements for graduation, including defense of the dissertation and its final approval by the Office of Graduate Studies (within this time frame, doctoral programs may have stricter requirements). Candidates must be continuously enrolled during that period. Failure to meet the five-year limitation will invalidate passing of the comprehensive examinations and remove the student from candidacy.

Readmission to candidacy requires the passing of the regular, or a special, comprehensive examination. Approvals for readmission are required from the academic program and the vice provost for Graduate Studies.

MASTER OF ARTS, MASTER OF SCIENCE PROGRAM IN INTERDISCIPLINARY STUDIES

This program, effective fall 2003, is designed to provide highly motivated students the opportunity to develop, with an advising committee, an individualized, interdisciplinary program for graduate study, in which approved courses in the humanities, sciences, social sciences, and the professional schools are combined to create a cohesive program not otherwise available on campus. Such a program will involve a minimum of two and a maximum of three academic disciplines.

The program is also designed to respond to faculty-driven initiatives in emerging fields of study, providing an avenue for faculty from different disciplines to collaborate in graduate education in areas of intellectual interest where specific graduate programs do not yet exist.

Admission to the program. Admission applications are available in the Office of Graduate Studies (117 CH). Students must meet all requirements for regular University admission. Admission will be selective, based on completed graduate coursework (if applicable), appropriate undergraduate coursework, grades, particular departmental requirements, letters of recommendation, and a statement of purpose regarding the intended fields of study. In addition, each student must obtain the consent of an eligible tenured or tenure-track faculty adviser *in each* of the two or three intended departments, indicating willingness to serve on the student's advisory and final examination committee and acceptance of the general plan of study and intended outcome. One of these faculty members will be designated as chair. One faculty adviser (in a two-department program) or two faculty advisers (in a three-department program) should have experience as chair of a master's or doctoral committee in which the degree was granted within the past three years. Each faculty member may chair only two M.A./M.S. interdisciplinary studies committees at any one time.

Admission decisions will be made by a committee composed of the coordinator of Graduate Studies, the senior academic adviser in Liberal Arts and Sciences, and a

representative from each of the departments or programs (not the proposed adviser), designated by the department chair. This committee may choose to include additional departmental or Graduate Council members in assessment of individual application files, if appropriate.

Degree requirements. The degree is intended to allow students, in collaboration with graduate advisers, to structure a coherent program from the approved graduate courses of at least two, and no more than three, separate academic disciplines. Changes to the advising committee or the plan of study after admission must be approved in advance by the Office of Graduate Studies.

The program requires 54 approved graduate credits and a culminating activity (thesis or project). If two departments or programs participate, 48 credits are required in the two programs with a minimum of 20 in each, and an additional 6 credits of Thesis (IST 503) or Project (IST 506). If three departments or programs participate, 48 credits are required in the three programs with a minimum of 15 in each, and an additional 6 credits of Thesis (IST 503) or Project (IST 506).

The following additional requirements apply to both options:

- ◆ All university requirements apply.
- ◆ All courses in each department must be approved by the faculty adviser in that department.
- ◆ All credits must be 500- or 600-level.
- ◆ Students earning the M.A. degree must pass the current Foreign Language Requirement for M.A./M.A.T. students before any final examination can be given and before a Graduate Office Representative for the thesis/project committee can be approved.
- ◆ Of the 54 credits applied to the degree, students must take a minimum of 36 credits at Portland State after admission to the graduate degree program.
- ◆ A maximum of 12 credits total of 501 (Research), 502 (Independent Study), and 505 (Reading and Conference) combined may be applied toward the 54 required credits. No 508 (Workshop) credits can be applied to the degree. A maximum of 6 credits of 509 (Practicum) and/or 504 (Internship) combined may be applied toward the degree. A total of 16 credits of 501, 502, 504, 505, and 509 combined may be applied toward the degree. (Courses numbered at the 600-level still must fit within these limits.)

- ◆ All students will be required to pass a final oral examination. For both thesis and project students, this will be a presentation of an oral examination on the thesis or project, in keeping with University requirements for master's final oral examinations, and including a representative from a different department selected by the Office of Graduate Studies to complete the final oral examination committee.

Systems Science

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M.S.
Ph.D.

Systems science is the study and application of general methods of problem solving and general principles governing systems of widely differing types. Systems concepts and techniques are used extensively for both applied and research purposes. In industry and government, considerable demand exists for professionals who are skilled in modern methods of decision making and systems design and who are capable of managing complex social and technical systems. In mathematics, engineering, business administration, and the natural and social sciences, systems theorists continue to make important contributions to the growth of knowledge within academic disciplines and to the application of knowledge across disciplinary boundaries. Indeed, the most exciting research in science and engineering today is outside the boundaries of traditional disciplines and is done at centers and institutes that study systems described as complex, artificial, adaptive, nonlinear, or intelligent. Such research can be viewed as the continuation and contemporary form of systems science, which crystallized after World War II around general systems theory, cybernetics, operations research, systems dynamics, systems engineering, and systems analysis.

In 1970, the Systems Science Ph.D. Program was established at Portland State University. The program encompasses both applications and theory-oriented aspects of the field. It is designed to prepare students for professional practice in industrial, governmental, and public serv-

ice organizations and for research and teaching in academic institutions.

The School of Business Administration, the College of Liberal Arts and Sciences (Departments of Economics, Mathematics, Sociology, Anthropology, and Psychology), and the Maseeh College of Engineering and Computer Science (Departments of Civil Engineering, Engineering and Technology Management, and Mechanical Engineering) formally participate in the program. In addition to the systems courses offered by these departments (e.g., cost-benefit analysis, operations research, systems analysis and synthesis, mathematical modeling, etc.), the systems science core faculty offers courses in artificial life, computer simulation, discrete multivariate modeling, information theory, neural networks, systems approach, systems theory, dynamical systems, system dynamics, and other areas.

Doctor of Philosophy in systems science. There are two options for the Ph.D. in systems science.

Core option: The student pursues interdisciplinary studies with a strong emphasis on systems coursework. Examples of study topics appropriate for inclusion in such a program are: intelligent systems; information, structure and dynamics; organization, decision making and optimization; modeling and simulation; systems philosophy; systems approach; and related topics in the study of complex systems.

Departmental option: The student undertakes advanced academic preparation primarily in a single department or school. Discipline-oriented studies, augmented by systems coursework, lead to dissertation research that incorporates systems ideas and methods. This option is currently available in the above listed departments in the College of Liberal Arts and Sciences, the Maseeh College of Engineering and Computer Science and the School of Business Administration.

Both of the options facilitate the design of curricula which are individually tailored to the needs and interests of the students.

Master of Science in systems science. The Systems Science M.S. program emphasizes the systems theories and methodologies taught in the current Systems Science Ph.D. program. Students choose a combination of systems science courses plus approved courses in associated disciplines. Concentration areas include (but are not limited to) the faculty research areas described in the document entitled *Systems Science Research at PSU*.

Upon completion of the program, students will understand a wide variety of systems ideas, be able to use them in modeling and analysis, be able to tap methods and ideas from a variety of disciplines, and will gain expertise in problem solving and in being integrative thinkers.

Admission requirements

Master of Science in systems science. Admission is based on the applicant's academic transcript, two letters of recommendation, a statement of interests and objectives, and other background material considered individually by an admissions committee, in line with general University admission policies. GRE/GMAT scores are recommended but not required. Students admitted to the Ph.D. program (either option) need not apply separately for admission to the master's program, but must complete and submit a GO-19D form to the program.

Doctor of Philosophy in systems science. Students with high academic standing and with a baccalaureate and/or master's degree may apply for admission to the doctoral program. Generally, applicants should have a combined GRE score of 1100 (quantitative plus verbal) or GMAT score of 550. Applicants must submit scores (taken within the last five years) for either the GRE aptitude or GMAT test to verify their national ranking. The Admissions Committee will consider exceptions to the five-year requirement, if the GMAT score or both GRE scores are in the 90th percentile or higher.

In considering an applicant for admission, the admissions committee for Systems Science seeks evidence of demonstrated intellectual capacity, undergraduate and/or graduate training in an appropriate discipline (or disciplines), adequate preparation in mathematics (including calculus, statistics, and computer programming), and the potential to pursue advanced study and research for the Ph.D. Students are admitted to the program in fall, winter, and spring terms. Prospective applicants should call or email the Systems Science Program for the information packet. It is also available online at www.sysc.pdx.edu. The Office of Admissions must receive: (1) the completed Application to Doctoral Program form, (2) the application fee, (3) one copy of all undergraduate and graduate transcripts to be sent by the institutions to Portland State University, and (4)

TOEFL if a foreign student. The applicant must arrange for the Admissions Committee for Systems Science to receive: (1) the completed Application to Doctoral Program form, (2) one copy of all undergraduate and graduate transcripts to be sent by the institutions, (3) GRE aptitude or GMAT scores, (4) three letters of recommendation from faculty and/or professionals acquainted with the applicant's abilities and record, (5) statement of the student's expectations of the program, and (6) TOEFL score of 575 or other evidence of English competency if a foreign student.

Each applicant who has received formal notice of admission to the Systems Science Doctoral Program should contact the program office for initial advising. Adviser(s) will be appointed to assist and consult with the admitted student regularly in planning the program of study and research. A comprehensive examination committee is appointed for each student to give required oral and written examinations. A dissertation committee supervises the research and preparation of the dissertation.

Degree requirements

Master of Science in systems science. To be granted an M.S. degree, students must meet the requirements below and submit the necessary Graduate Studies Office forms. All students will be required to complete 24 credits of graded courses (pass/no pass are not applicable) listed under Systems Science in the PSU catalog numbered SySc 511-599 or SySc 610-699. Up to 3 credits of SySc 507 may be included to satisfy this requirement. *Note: There is a seven-year limit on courses for the master's degree. This is not true for the Ph.D.* The master's program has two options:

Thesis option: An additional 12 credits of Systems Science courses (numbered as above) and/or approved courses from other departments (see document entitled, *Approved Resource Courses for the Master of Science Program in Systems Science*); and 9 thesis credits. A student selecting the thesis option must form a thesis committee of at least three faculty members (two committee members, one of whom must be a systems science core faculty, and a Graduate Studies representative), and pass an oral thesis defense.

Non-Thesis option: An additional 12 credits of Systems Science courses (numbered as above) and/or approved courses from other departments (see document entitled, *Approved Resource Courses for the Master of Science Program in Systems Science*). Up to 4 credits of Systems

Science by-arrangement credits may be used to satisfy this requirement.

A student selecting the non-thesis option will be required to pass two written comprehensive exams, each of which covers a minimum of 16 credit hours of coursework. One of the examiners must be a Systems Science core faculty member. Students admitted to the Ph.D. program who pass their comprehensive exams meet this requirement automatically. Ph.D. students who do not pass their comprehensive exams meet this requirement if they pass two of their written exams, one of which is a core systems science exam.

Doctor of Philosophy in systems science. A discussion of general requirements for doctoral degrees is on . Minimum requirements specific to the Ph.D. in systems science include 72 course credit hours, organized as follows:

Systems component. Students in both the core and departmental options are required to complete 16 credits of systems science coursework as the minimum systems component of the program. All students must satisfy the first 8 credits by taking two of the following courses: SySc 511, SySc 512, SySc 513, SySc 514. Any combination of two of the courses, except SySc 512 and 514 is acceptable. SySc 511 and 512 explore systems concepts in more quantitative terms than SySc 513 and 514. Consequently, students taking SySc 511 and 512 should have stronger quantitative background.

To fulfill the remaining 8 credits of the systems component, students must take two systems science courses numbered 515 through 599 or 610 and above. These elective courses are either advanced systems science courses or integrative courses. The integrative courses have emerged from the interdisciplinary nature of the program. They are taught jointly by faculty from Systems Science and participating departments, and the topics covered illustrate specific applications of systems concepts.

Additional coursework requirements. Beyond the systems component described above, additional graduate courses are required to meet the 72 credit hour program minimum for advancement to candidacy. Participating departments may have additional or more specific requirements. Core option students are required to take 3 credits of SySc 507 (offered at 1 credit per term) and an additional 9 credits in Systems Science beyond the 16 credit core requirement cited earlier. Design of the student's comprehensive exam and anti-

pated dissertation research should guide course selection.

Courses taken to satisfy the systems core and additional coursework requirements must be at the 500 or 600 level. Credit for graduate work done elsewhere (with a grade of B or better) may also be approved. However, at least 27 credits of coursework (not including dissertation credits) must be taken at Portland State University.

Decisions to transfer credits for core option students are made by the program director upon recommendation of the student's adviser(s); decisions for departmental option students are made by the department/school. There is no specific time limitation on when courses were taken; however, the student is expected to be familiar with, and may be examined on, material being given in current courses equivalent to those included in the comprehensive examination proposal.

Enrollment. Students are required to be enrolled continuously, except if a leave of absence is formally requested and approved by the program director. Failure to take courses for a year, or failure to maintain continued progress after coursework is completed will result in a student being dropped from the program.

Language requirement. Foreign language competency may be required of departmental option students in some departments which also determine the level of competency and testing procedures. (Consult the appropriate department for further information.) There is no foreign language requirement for the core option. If required, the foreign language examination must be successfully completed before the student is allowed to take the comprehensive examinations.

Comprehensive examinations. Written and oral comprehensive examinations are required in appropriate areas to demonstrate the breadth and depth of the student's academic competence, and expertise in research techniques pertinent to his/her intended dissertation area. Written exams cover four distinct areas, each including a minimum of 16 course credit hours.

Advancement to candidacy. All students must establish competency in appropriate research methodology before beginning their dissertation research. After this and all other requirements have been met, the student prepares a proposal for independent research leading to a significant and original contribution to knowledge in the systems field. When the proposal is accepted, the student is advanced to candidacy, and then focuses exclusively

on research. Students must register for at least 27 credits of dissertation research after advancement to candidacy.

Dissertation. Completed research is presented in a dissertation which must be approved and successfully defended in a final oral examination. After Advancement to Candidacy, but prior to this examination, core students are required to present their research at the SySc 507 Seminar, a pre-announced 50-minute formal presentation.

The student can anticipate approximately four to five years of full-time study beyond the baccalaureate degree in order to satisfy the program requirements. Detailed additional information on requirements and procedures are contained in the document, "Systems Science Ph.D. Program Supplemental Rules," and should be obtained by visiting our Web site: www.sysc.pdx.edu or contacting the Systems Science Ph.D. Program.

GRADUATE CERTIFICATES

The Systems Science program offers graduate certificates in two specialty areas: computational intelligence and computer modeling and simulation. Please see the Graduate Studies section on for graduate certificate requirements.

Courses

Courses with an asterisk (*) are not offered every year.

SySc 501

Research (Credit to be arranged.)

Research which is normally not part of the thesis.

SySc 503

Thesis (Credit to be arranged.)

All aspects of the thesis including research and its writing.

SySc 505

Reading and Conference (Credit to be arranged.)

Scholarly examination of literature including discussion between student and professor.

SySc 507

Seminar (Credit to be arranged.)

Discussion of recent and current research and/or presentation of progress and final reports.

SySc 508

Workshop (Credit to be arranged.)

SySc 510 Selected Topics (Credit to be arranged.)

SySc 511

Systems Theory (4)

Surveys fundamental systems concepts and central aspects of systems theory. The course begins with an overview of the systems paradigm and the systems field as a whole. Topics then include introductions to set and information-theoretic multivariate relations and structures, discrete dynamic systems; model representation and sim-

ulation; decision analysis, optimization, game theory; artificial intelligence, complex adaptive systems. Readings drawn from mathematics, the natural and social sciences, and the professional disciplines (e.g., engineering, business). Course content derives both from "classical" general systems theory, cybernetics, and operations research as well as from contemporary systems research, which is organized around the themes of nonlinear dynamics, complexity, and adaptation. Prerequisites: graduate standing, calculus, probability, computer programming.

SySc 512

Quantitative Methods of Systems Science (4)

An introduction to the quantitative representation and investigation of systems with a focus that emphasizes tools more than applications. Topics include linear dynamics, optimization, and uncertainty. The level of presentation assumes familiarity and facility with calculus. Notions from linear algebra unify the topics and those notions will be presented. Required coursework includes both calculations to be done on a computer and calculations to be done by hand. Prerequisites: one year of calculus, probability and familiarity with computers, graduate standing.

SySc 513

Systems Approach (4)

Provides practitioner-oriented definition of systems, including: importance of observer dependence and context, and ideas of meta-systems, subsystems; notion of value system and associated optimization/sub-optimization;



aspects of life-cycle project management; the underlying notions of inquiring systems; and key aspects of learning (human) organizations. Qualitative tools for the system's practitioner, including graphical tools, basic ideas of modeling/simulation and structural modeling. Also, the multiple perspectives aspect of the systems approach. Prerequisite: graduate standing.

SySc 514
System Dynamics (4)

Introduces concepts and a methodology for analyzing the behavioral dynamics of systems that consist of complex "webs" of feedback loops. Primary emphasis is on building computer models of these systems and using these models to enhance understanding, make predictions, and find ways to improve the performance of systems and processes. Models are defined in terms of a set of "rate" equations that are numerically integrated to simulate behavior over time. The process of applying this methodology to real world situations is discussed in detail. Prerequisite: graduate standing.

SySc 521/621
Systems Philosophy (4)

A study of ideas central to systems theory and philosophy. The course focuses on concepts rather than mathematics, and organizes systems ideas around the theme of the fundamental "difficulties" (problems, imperfections, modes of failure) encountered by systems of widely differing types. Though these systems ideas often come from the natural sciences and engineering, they are significant also for the social sciences, the professional fields, and even the arts and humanities.

SySc 525/625
Agent Based Simulation (4)

Introduction to simulation methods that impart simple rules to collections of "agents" that interact within an environment represented as a spatial grid. The properties of the agents and the environment vary dynamically, and often result in behavior patterns that are complex in ways that are not readily apparent from an examination of the rules that generated the behavior. Such behavior is often referred to as emergent, with examples including flocks of birds, traffic jams, ant colonies, crowd phenomena, etc. Of particular interest is the fact that such phenomena occur without centralized control. This approach is often used to study social systems, but may be used to study a variety of natural and non-natural systems.

SySc 527/627
Discrete System Simulation (4)

The primary focus is on the application of discrete system simulation to real world problems using the Arena simulation language. The mathematical basis for discrete system simulation is probability theory and queuing theory. It is used extensively in the fields of operations research, civil engineering, and industrial engineering. Students apply the tools to projects within their fields of interest. Prerequisite: graduate standing or consent of the instructor.

SySc 529/629
Business Process Modeling and Simulation (4)

The primary focus is on the application of system simulation to process flow problems. Extend, a special-purpose computer simulation language, is used to develop models to describe and analyze both continuous and discrete flow processes in order to better understand bottlenecks and how to alleviate them. Such models are used to study, for example, manufacturing systems, business systems, and engineering systems. Students apply the concepts to projects within their fields of interest. Prerequisite: graduate standing or consent of the instructor.

SySc 541/641, 542/642
Dynamic Systems I, II (4, 4)

The fundamental concepts of modeling time dependent deterministic systems, including applications of dynamic models to various types of systems including electrical, mechanical, economic, and ecological. Computer methods are used as illustrations and as tools for analysis. Prerequisites: familiarity with high-level computer languages, applied linear algebra, differential equations, and multivariable calculus.

SySc 545/645, 546/646
Information Theory I, II (4, 4)

Establishes theoretical limits on the performance of techniques for compression or error correction of signals. This course focuses on communications applications, specifically source coding and channel coding for discrete signals. Topics will include: Entropy and Mutual Information, Asymptotic Equipartition (the Ergodic Theorem of Information Theory), Entropy Rates of Information Sources, Data Compression, and Channel Capacity. Information Theory II is a continuation of SySc 545/645 and focuses on source coding and channel coding for continuous signals. Topics will include: Gaussian Channels and Rate Distortion Theory.

SySc 551/651
Discrete Multivariate Modeling (4)

This course focuses on information theory as a tool for modeling and multivariate analysis and as a general framework for the study of structure and organization. The course examines the use of set- and information-theoretic techniques for the analysis of constraints in qualitative, as well as quantitative, data. Also covered are software implementations, relations to log-linear methods, and applications in the natural and social sciences and the arts. Prerequisite: SySc 511/611 or consent of instructor.

SySc 552/652
Game Theory (4)

Study of cooperation, competition, and conflict in social systems and associated issues of rationality. Emphasis is on game-theoretic models, particularly of dilemmas of collective action, their possible solutions, and their applications to social, economic, and political phenomena. Also covered are social choice theory, differential equations models of competition and conflict, and other systems-theoretic approaches to similar problems. Prerequisite: SySc 511/611 or consent of instructor.

SySc 553/653
Manufacturing Systems Simulation (4)

Application of discrete systems simulation to manufacturing processes, including production cells, assembly operations, materials handling, and scheduling. Students also learn general systems modeling concepts, such as how to model random processes and probabilistic events, and how to use a specific simulation package that features realistic animation of the system under study. Prerequisites: basic knowledge of probability and statistics, and some exposure to manufacturing processes and terminology. This course is the same as EMgt 553/653; course may only be taken once for credit.

SySc 557/657
Artificial Life (4)

Artificial life (ALife) encompasses mathematical and computational studies of phenomena such as replication, metabolism, morphogenesis, learning, adaptation, and evolution. Situated at the intersection of computer science and biology (also physics and chemistry) and focused on abstract, materiality-independent aspects of life, its purpose is two-fold: to understand biological phenomena and to develop computational technologies. ALife bears significantly also on the social sciences and philosophy. It is part of the research program into "complex adaptive systems". Emphasizes (1) cellular automata (and other discrete dynamical models), (2) ecological and evolutionary simulations, and (3) genetic algorithm optimization and adaptation. Other topics include artificial chemistry (metabolism and origins of life) and philosophical issues. Prerequisites: graduate standing, calculus, probability, computer programming.

SySc 575
AI: Neural Networks I (4)

Introduces approach for developing computing devices whose design is based on models taken from neurobiology and on notion of "learning." A variety of NN architectures and associated computational algorithms for accomplishing the learning are studied. Experiments with various available architectures are performed via a simulation package. Students do a major project on the simulator or a special programming project. Prerequisite: graduate standing.

SySc 576
AI: Neural Networks II (4)

Focuses on applications. Topics in fuzzy set theory, control theory, and pattern recognition are studied and incorporated in considering neural networks. A design project (using NN simulator) in selected application area is done by each student. Prerequisite: SySc 575.

SySc 601
Research (Credit to be arranged.)

SySc 603
Dissertation (Credit to be arranged.)

SySc 605
Reading and Conference (Credit to be arranged.)

SySc 607
Seminar (Credit to be arranged.)

SySc 608
Workshop (Credit to be arranged.)

SySc 610
Selected Topics (Credit to be arranged.)

College of Liberal Arts and Sciences

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The College of Liberal Arts and Sciences provides an opportunity for students to obtain a liberal education—an education that both broadens and deepens their understanding of the major areas of knowledge and scholarship, and develops their expertise in an area of specialization. A liberal education is an education for life. It prepares students to make informed decisions about their lives and to think critically and analytically.

All students—Liberal Arts and Sciences majors as well as those from professional schools and programs—take a selection of courses that represent the three areas of the college: arts and letters, science, and social science. Course offerings range from those designed to provide a foundation for all baccalaureate degrees to those of an advanced, specialized nature.

Acquiring a balanced and integrated liberal education requires planning and consultation with an adviser. Faculty advisers in each department and program are available to help students structure their academic careers so they may get the most from their college experience.

The instructional units of the college include Anthropology, Applied Linguistics, Biology, Black Studies, Chemistry, Chicano/Latino Studies, Child and Family Studies, Communication, Conflict Resolution, Economics, English, Environmental Programs, Foreign Languages and Literatures, Geography, Geology, History, International Studies, Mathematics and Statistics, Native American Studies, Philosophy, Physics, Psychology, Science Education, Sociology, Speech and Hearing Sciences, and Women's Studies. Undergraduate and graduate degree programs and certificates available through the college are listed on pages 9-11.

Undergraduate programs

BACCALAUREATE DEGREES

The College of Liberal Arts and Sciences is a large and diversified unit offering more than 20 majors (some with additional choices of sub-specialization), several academic certificates and teaching endorsements, and numerous departmental minors, as well as minors in computer applications and professional writing.

The college also offers a selection of alternative programs for students who are highly motivated and who have a record of high scholarly achievement. Students may obtain information concerning any one of several departmental honors programs from the participating department. These programs generally allow an accelerated exposure to higher education, thereby broadening the experience of the student.

All majors in the College of Liberal Arts and Sciences, along with University and general education requirements, lead to a bachelor's degree. Requirements for each major are listed under the appropriate department. (Students wishing to emphasize a broad study in arts and letters, science, or social science may do so by majoring in liberal studies. For these options see page 142)

MINORS

The following departments and programs in the College of Liberal Arts and Sciences offer academic minors: Anthropology, Applied Linguistics, Biology, Black Studies, Chemistry, Communication, Economics, English, Environmental Studies, Film Studies, Foreign Languages and Literatures, Geography, Geology, History, International

Studies, Mathematics and Statistics, Native American Studies, Philosophy, Physics, Psychology, Sociology, Women's Studies, and Writing. (Students majoring in a field of study outside Liberal Arts and Sciences also may declare an academic minor in one of these programs.) The requirements for these minors are indicated within the appropriate department sections of this Bulletin.

COMPUTER APPLICATIONS MINOR—COLLEGE-WIDE

The computer applications minor may accompany any departmental major. This minor is designed to encourage and emphasize the application of computer technology and to acquaint the student with hardware and software function and design appropriate to modern academic disciplines. The minor is tailored to the specific needs and interests of the student.

All students who declare this minor must coordinate their program through an assigned adviser in one of the following departments: Anthropology, Applied Linguistics, Biology, Chemistry, Economics, English, Foreign Languages and Literatures, Geography, Geology, History, Mathematics and Statistics, Physics, Psychology, Sociology, or Speech Communication. Selection of a department constitutes a student's declared emphasis.

Credits

Three lower-division, adviser-approved computer science courses selected from, but not restricted to, the following: CS 105, CS 106, CS 107, CS 161, CS 162, CS 163, CS 199, CS 200, CS 201, CS 202, CS 208, CS 250.....	10-12
Four adviser-approved courses in advanced computer applications, with at least 3 credits outside the student's major department. These courses may come from any unit in the University but may not include 405 reading/conference courses.....	12
A one-term, adviser-approved senior practicum or seminar.....	3
Adviser-approved, upper-division research project.....	3
Total	28-30

NATIVE AMERICAN STUDIES MINOR

Native American Studies (NAS) is an interdisciplinary program with coursework drawn from Anthropology, English, History, Public Administration, Social Work, and other departments and schools. The substantive focus of this curriculum is the histories and cultures of American Indians, Alaska natives, and Native Hawaiians. The minor is meant to serve three primary student constituencies:

- ◆ students who have a serious academic interest in Native Americans and who wish to combine the study of Native Americans with their major;
- ◆ students who plan careers in Indian or native affairs;
- ◆ students who have a nascent interest in Native Americans and wish to fulfill their general education requirements with courses in this area.

The objective of the internship requirement is to place NAS students in community or government organizations so that each student has an opportunity to acquire understanding of Native issues.

For information and advising, contact director Tim Garrison at garrison@pdx.edu.

Credits

NAS 201 Introduction to Native American Studies.....	4
Upper-division credit courses chosen from the following (or other adviser-approved courses).....	24
Anth 313 Indian-White Relations	
Anth 314 Native Americans	
Anth 364 Pacific Northwest Prehistory	
Anth 365 North American Prehistory	
Anth 417 Advanced Topics in Native American Studies	
Anth 422 Contemporary American Indian Policy	
Anth 464 Topics in Northwest Prehistory	
Eng 305 Topics: Native American Cinema	
Eng 308 Topics: Native American Women Writers	
Eng 309 American Indian Literature	
Hst 330 Native Americans of Eastern North America	
Hst 331 Native Americans of Western North America	
Hst 349 United States Indian Policy	
Hst 464/564 Indians of the Pacific Northwest	
PA 510 Tribal Sovereignty	
PA 510 Modern Federal Indian Law	
PA 510 Environment and Tribes	
NAS 404 Cooperative Education/Internship.....	4
Total	32

Courses

NAS 201

Introduction to Native American Studies (4)

Introduction to the principal subject matter and interdisciplinary methods of Native American studies. Topics include understanding traditional cultures and languages and their significance for contemporary native peoples; the political and legal status of Native Americans in the United States and at the U.N.; contemporary native communities and tribal governments; Native American literature, art, music, dance, both contemporary and traditional.

NAS 404

Cooperative Education/Internship (Credit to be arranged.)

Prerequisites: NAS 201, and 8 upper-division credits in NAS or courses approved by adviser.

CERTIFICATES

Specialized academic certificates are offered by several units in the College of Liberal Arts and Sciences: Applied Linguistics/TESL, Chicano/Latino Studies, Foreign Languages/Teaching Japanese, International Studies, and postbaccalaureate certificates in Black Studies and Women's Studies. (Refer to the appropriate department for certificate requirements.) Requirements for these certificates are met concurrently with completion of a major in a selected field.

Secondary teaching licenses allow the student to teach the selected discipline at specified grade levels in public schools in

Oregon. Recommended courses for those preparing to be teachers are listed under appropriate departments.

DEGREE COMPLETION

In addition to an increasing range of evening and weekend courses on campus, the college offers innovative degree completion options at three off-campus sites; the CAPITAL Center in Beaverton; the Salem Center, located in Salem on the campus of Chemeketa Community College, and on the campus of Mt. Hood Community College in Gresham. The CAPITAL Center and the Mt. Hood Community College center allow upper-division students to complete a degree in general studies: social sciences with an optional minor in business administration. The Salem Center provides upper-division students with an option of majoring in either child and family studies or in social sciences.

Graduate programs

There are many options available for graduate study within the College of Liberal Arts and Sciences. Currently students may specialize in any one of the many master's programs, or four doctoral programs.

MASTER OF ARTS AND MASTER OF SCIENCE PROGRAMS

Master of Arts and Master of Science degrees are designed for the student who wishes to conduct advanced studies in a particular discipline. Generally the programs are flexible enough for students, with the aid of an adviser, to design a program of study that allows them to pursue their particular interest. The requirements of each discipline are listed under the departments that have the M.A./M.S. option available.

MASTER OF ARTS IN TEACHING AND MASTER OF SCIENCE IN TEACHING PROGRAMS

The Master of Arts in Teaching and the Master of Science in Teaching are primarily designed for current middle and high school level teachers who need to do specific graduate work in order to obtain their continuing license. The program allows these teachers to obtain this further licensure as well as continue advanced studies in the area of their choice. These degrees are also available to non-teachers who have an interest in the interdisciplinary possibilities of these degrees. In the case of this second group, the degree does not provide any teaching licensure. The program of study for these degrees should be carefully designed and must be approved by an adviser. The specific

requirements of each discipline are listed under the departments for which the M.A.T./M.S.T. option is available. (For the interdisciplinary options see page 144.)

DOCTORAL PROGRAMS

Many departments in the College of Liberal Arts and Sciences participate in one or more multi-disciplinary doctoral programs: Environmental Sciences and Resources, Systems Science, and Urban Studies. They also offer the doctorate in mathematics education and mathematical sciences. The doctoral degree is for the person who wants the most advanced academic degree, generally with a life-long objective of expanding the scope of knowledge of a specialized field of study. The specific requirements of each available option are listed under the participating departments and programs.

Conflict Resolution

239 Neuberger Hall
503-725-9175

M.A., M.S.

The Master of Arts/Sciences degree program in conflict resolution is an interdisciplinary, academic program within the humanities and social sciences, as well as a professional program. The program's general divisions are:

- ◆ Conflict resolution theories, methods, and practices
- ◆ International and intercultural conflict resolution
- ◆ Peace and justice

These divisions include the following areas of emphasis: mediation, democratic dialogue, violence prevention, restorative justice, peace education, nonviolent social change, international conflict resolution, intercultural conflict resolution, peace psychology, law-related conflict resolution, environmental conflict resolution, public policy conflict resolution, gender and peace, and dispute systems design and evaluation. Graduate courses in conflict resolution are also offered in support of graduate programs in other fields.

Admission requirements

For admission to graduate study, the student's background and preparation should reflect an ability to pursue graduate work in conflict resolution. It is not required that the applicant's undergraduate degree be in

any specific academic discipline. Because the program is broadly interdisciplinary, students with any undergraduate degree are encouraged to apply for admission. Should the student's preparation be deemed inadequate in certain areas, the student will be required to overcome those deficiencies through formal coursework and/or directed readings. All such work is separate from work toward the master's degree.

Each applicant to the conflict resolution graduate program must submit a statement of purpose explaining his or her reasons for pursuing an advanced degree, along with an academic writing sample of at least ten pages in length. Additionally, each applicant must submit three letters of recommendation from individuals closely acquainted with the applicant's academic career and, where applicable, with the applicant's professional background and competencies.

All students are admitted to the program on conditional status. Regular status and retention in the graduate program requires the satisfactory completion of 12 graduate credits with a minimum grade of 3.00 in each course and evidence of satisfactory progress toward the degree.

Degree requirements

University master's degree requirements are listed on page 70. Specific program requirements are listed below.

Students entering this program are expected to develop an understanding and appreciation of the theoretical, conceptual, and methodological breadth of the field and to develop expertise in the pursuit of their own particular interests in the study of conflict resolution. In conjunction with the student's adviser, each student will design a program based upon particular interests within the field of conflict resolution.

This program will provide the student with the appropriate research competencies—critical, qualitative, or quantitative—to pursue independent inquiry under faculty guidance. The master's degree program consists of a minimum of 63 credits of coursework, including 9 credits of thesis or project work and 9 credits of practicum work. Each student's program must be based upon the following courses or their transfer equivalencies.

	Credit
CR 512 Perspectives on Conflict Resolution	4
CR 513 Philosophy of Conflict Resolution	4
CR 518 Psychology of Conflict Resolution	4
CR 515 Negotiation and Mediation	4
CR 524 Advanced Mediation	4
CR 526 Intercultural Conflict	4
CR 522 Thesis Preparation Seminar	1
At least one 4-credit course in research methods ..	4

(Several departments offer courses that satisfy this requirement, such as Anth 512, Eng 596, PS 595, Psy 597, Psy 598, Soc 592, Soc 593, Sp 521, Sp 531).

Areas of emphasis. All graduate students are expected to develop a theoretical competency in at least two areas of emphasis. Areas of emphasis will be designed in consultation with the student's program adviser. Areas of emphasis currently supported in this program include: mediation, democratic dialogue, violence prevention, restorative justice, peace education, nonviolent social change, international conflict resolution, intercultural conflict resolution, peace psychology, law-related conflict resolution, environmental conflict resolution, public policy conflict resolution, gender and peace, and dispute systems design and evaluation. Other areas of emphasis may be developed, according to particular student needs, in consultation with the program adviser.

Emphasis area coursework. Students must take a minimum of four elective courses. These four courses, combined with the core courses, must support at least two emphasis areas. The program director maintains a current list of recommended elective courses that support emphasis areas.

Practicum. Each student will complete a 9 credit, 300-hour practicum (CR 509) that covers at least one of the emphasis areas. The practicum will be set up in consultation with the student's program adviser. Optimally, the practicum will give the student professional experience in an emphasis area, as well as give the student ideas about research topics.

Culminating experience. Students must complete one of the following culminating experiences. The decision to pursue one or the other of these options is to be made in conjunction with the student's faculty adviser.

- ◆ **Master's thesis.** Each student will complete a thesis and pass a final oral examination on the thesis. Students must complete at least 9 credits of CR 503 Thesis; 9 credits maximum count toward the degree. The thesis director and thesis committee will be selected, in consultation with the program adviser. Prior to beginning work on the thesis, all students will be required to take the Thesis Preparation Seminar where they demonstrate proficiency in relevant theories and research methodology.
- ◆ **Master's project.** The student will complete a major project relating to his or her major area of study and present the results, with a written report and literature review, to faculty and students. The student will comply with current program guidelines for selection of project topic, project format, project committee, and presentation of the project outcomes. The student will

complete the project under the direct supervision of the academic adviser. Students pursuing this option are required to sign up for at least 9 credits of CR 506 Special Project.

Courses

CR 301

Introduction to Conflict Resolution (4)

Introduces conflict resolution studies. Explores both the nature of conflict and our understanding of what resolution seeks to achieve. Emphasizes strategies students currently employ toward resolving conflict in their own lives, with suggestions and examples that broaden their understanding of what is possible. Small groups, simulated conflict situations, role plays, and examples from community service provide students with the opportunity to both better understand their own strategies and develop new ones.

CR 512

Perspectives in Conflict Resolution (4)

Introduction to full scope of the master's degree program. Since the program is intended to embrace both humanities and social science orientations, students need to become acquainted with the methods and terms of criticism

arising from these sometimes-divergent disciplines. Students also need to become acquainted with the diverse models of conflict resolution derived from both the humanities and social sciences. A particular focus will be given to the legal and ethical aspects of these models, along with a full exploration of legalities and professional ethics in conflict resolution practice. Recommended prerequisite: 4 credits literature and 4 credits psychology or sociology.

CR 513

Philosophy of Conflict Resolution (4)

Introduction to the insights that philosophy offers to the field of conflict resolution. The course will also explore the impact that conflict resolution practice may have on philosophical theory. Additionally, ethical issues that arise during conflict resolution work will be carefully considered. Recommended prerequisite: 3 credits philosophy.

CR 514

Conflict Resolution in Divergent Settings (4)

Examination of the variety of settings where conflict resolution takes place. Guest speakers share their experience and theoretical insights. Prerequisites: CR 512, 513.

CR 515

Negotiation and Mediation (4)

Introduction to collaborative approaches to

responding to conflict. A theoretical framework will be established for using negotiation and mediation in a variety of settings. Students will learn how to function as a neutral third party focusing on: conflict analysis, communication skills, maintaining a neutral role, creating a safe environment, and ensuring procedural, substantive and psychological satisfaction. Ethical issues and concerns in the field of mediation will be presented. Recommended prerequisite: 3 credits psychology or sociology.

CR 517

Nonviolence (4)

Designed to acquaint students with the theories and history of nonviolence from ancient times to the present, with some speculation as to future use. Recommended prerequisite: 3 credits of philosophy.

CR 518

Psychology of Conflict Resolution (4)

Introduction to the psychological research and insights that illuminate conflict resolution theory and practice. A dual focus on both methods and research will be maintained throughout the curriculum. Recommended prerequisite: 3 credits psychology.

CR 522

Thesis Preparation Seminar (1)

Introduction to a variety of approaches to thesis writing and research. Students examine completed master's degree theses in conflict resolution. Recommended prerequisite: one year completed in the master's degree program.

CR 524

Advanced Mediation (4)

Focus on the qualities of the practitioner that enhance the practice of mediation. The practice of mediation involves a particular kind of presence, that of a non-judgmental observer. To maintain such a presence while in the midst of emotions, intense interactions, hostility, and conflict requires much clarity, steadiness, and stability. Students will learn ways to achieve these qualities through the cultivation of mindfulness. Recommended prerequisites: CR 515.

CR 525

Conflict Resolution Systems Design (4)

Acquaints the student with a systems approach to designing conflict resolution services. These services are designed for a wide variety of settings to handle conflicts effectively at the lowest cost. Students learn to diagnose and correct problems in an existing system, as well as create and implement a wholly new system.

CR 526

Intercultural Conflict Resolution (4)

Explores the ways in which cultural similarities or difference might influence the conflict resolution process. In this context, culture is defined broadly and will be considered as it plays a part in either the actuality or perceptions of our experience. In addition, issues of power and marginality as they relate to dynamics of culture will be explored. Students explore and learn from other cultures and apply this learning in the evaluation and use of conflict resolution paradigms.



Anthropology

141 Cramer Hall
503-725-3914
www.anthropology.pdx.edu

B.A., B.S.
Minor in Anthropology
Secondary Education Program—
Social Science
M.A.

Anthropology is concerned with two basic questions: How is it that human beings are both like and unlike other animals? And how is it that there are so many sorts of human beings both like and unlike one another in different societies and cultures? In seeking answers, anthropologists deal with prehistoric and historic times and with such topics as human evolution, comparative primate behavior, language, and human ecology.

The curriculum in anthropology is designed to develop an understanding of human life from these various perspectives. It does this by providing, both in general survey courses (Anth 101, 102, 103) and in its departmental major program, a balanced view in terms of the anthropological subfields of physical anthropology, archaeology, linguistics, and socio-cultural anthropology.

The departmental major program is of benefit to the liberal arts student in providing the most broadly based view of human adaptation, variation, and achievement. A variety of ethnographic courses is offered for persons with particular regional or area interests, such as East Asia, Latin America, Africa, and the Pacific Northwest. Finally, the major provides the necessary general anthropological background for those interested in graduate study in the discipline.

Undergraduate program

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Limitations. Students majoring in anthropology should seek assignment to a department adviser no later than the beginning of the junior year. Selection of appropriate courses to supplement the student's major work should be made in con-

sultation with the adviser. No student majoring in anthropology will be permitted to offer more than 72 credits of work in anthropology for the bachelor's degree. This limitation will be waived only through petition to the department.

Degree requirements

Requirements for major. In addition to meeting the general University degree requirements, the anthropology major must meet minimum departmental requirements as follows:

	Credits
Anth 101 Introduction to Physical Anthropology	4
Anth 102 Introduction to Archaeology	4
Anth 103 Introduction to Social/Cultural Anthropology	4
Anth 304 Social Theory or Anth 305 Cultural Theory	4
Anth 350 Archaeological Method and Theory	4
Anth 372 Human Variability (4) or Anth 370 Paleoanthropology (5)	4-5
Ling 232 or 233, or Stat 244	4
Upper-division anthropology electives (6 courses, see below)	24
Total anthropology coursework	52-53

All anthropology students (B.A. or B.S.) must complete two years of a foreign language or demonstrate equivalent proficiency.

Elective requirements. Upper-division electives shall be selected from at least two subfields of anthropology (physical, social/cultural, or archaeology) and include at least one methods course (i.e., 412, 452, 453, 454, 455, 478, 479). At least 8 of the 24 credits must be in formally numbered 400-level courses (i.e., not including 401, 404, 405, 407, 410).
Note: In exceptional circumstances, the department may permit a student to apply a maximum of one lower-division course to the upper-division elective requirement.

All anthropology courses used to satisfy the departmental major requirements must be taken for a letter grade and must have been assigned a grade of C- or better. Courses taken outside the department as part of departmental requirements (i.e. Ling 290 or Stat 244, Foreign Languages) may be taken pass/no pass (subject to the University limitations on the maximum number of hours taken pass/no pass) or for a letter grade. However, students who take these courses for a letter grade must earn a C- or better. Students must earn a cumulative grade point average of 2.00 or better in all courses required for the anthropology bachelor's degree (including those courses taken outside the department as part of departmental requirements).

Requirements for minor. To earn a minor in anthropology a student must complete 28 credits (12 credits of which must be taken in residence at PSU), to include the following:

	Credits
Anth 101 Introduction to Physical Anthropology	4
Anth 102 Introduction to Archaeology	4
Anth 103 Introduction to Social/Cultural Anthropology	4
One of the following courses:	4-5
Anth 304 Social Theory (4)	
Anth 305 Culture Theory (4)	
Anth 350 Archaeological Method and Theory (4)	
Anth 372 Human Variability (4) or Anth 370 Paleoanthropology (5)	
Upper-division anthropology electives—three courses. (Upper-division electives must include at least one 400-level course, excluding courses numbered 401, 404, 405, 407)	12
Total	28-29

All anthropology courses used to satisfy the departmental minor requirements, whether taken in the department or elsewhere, must be graded C- or above. Students must earn a cumulative grade point average of 2.00 or better in all courses required for the anthropology minor (including those courses taken outside the department as part of departmental requirements).

SECONDARY EDUCATION PROGRAM

Adviser: **V.A. Butler**

(See General Studies: Social Science, page 142)

Graduate programs

Master of Arts. The department offers a program leading to the Master of Arts degree. The program is designed to give the student a graduate level of competence in general anthropology, including the major subfields of physical anthropology, archaeology, and social-cultural anthropology. At the same time, the program will permit the student to pursue a special interest in one of the subfields. Students have the option of choosing either the thesis track or the applied/policy track. The applied track is designed to prepare students for professional employment related to applied anthropology. Students in this track will complete an internship and internship paper, and 8 additional hours of coursework, in place of the traditional thesis.

The thesis track candidate is required to do research in an area of special interest and prepare a thesis based upon it.

The master's program has been planned for students who hold an undergraduate degree in general anthropology or its equivalent in course coverage. Under these circumstances, the master's degree, including research and thesis, may be completed in two to three years. The undergraduate major is not required, however, for admission to the program. In the latter case, completion of the degree may require a more extended period of study. Students without an adequate background in anthropology will be required to take certain selected undergraduate courses to remove deficiencies. These courses normally do not offer graduate credit.

Admission requirements

For admission to graduate study the student must have a minimum of a 3.25 grade point average in anthropology courses and an overall GPA of 3.00. In addition, applicants must submit GRE scores, a 500-word statement indicating why he or she is interested in pursuing a graduate degree in anthropology, and a sample of written work (e.g., a term paper). All applicants must also arrange to have three letters of recommendation indicating professional promise sent directly to the Department's Graduate Admission Committee. To facilitate scheduling of graduate courses, students ordinarily are admitted for fall term only.

Degree requirements

Thesis track. Of the 48 required credits, 36 must be in anthropology and must include:

	Credits
Anth 511, 550, 570 Core Seminars in Anthropology	12
Graduate-level Anthropology Electives (3 courses) [†]	12
Approved graduate-level electives (Anth, non-Anth) [†]	8
An adviser-approved, graduate-level course in research methods [‡]	4
Anth 501 (thesis research)	4
Anth 503 (thesis)	8
Total	48

Applied/Policy track. Of the 56 required credits, 36 must be in anthropology and must include:

	Credits
Anth 511, 550, 570 Core Seminars in Anthropology	12
Anth 515 Applied Anthropology	4
Graduate-level Anthropology Electives (2 courses)	8
Approved graduate-level electives (4 courses, at least 2 non-Anth)	16
An adviser-approved, graduate-level course in research methods	4
Anth 501 (pre-internship research)	4
Anth 503 (internship)	8
Total	56

Five calendar years from the term of admission will be the maximum time allowed to complete all requirements for a master's degree. Terms on approved leave of absence will be charged against the five-year limitation.

In addition to formal course requirements, the following are also necessary:

1. Fulfilling the foreign language requirement. Ordinarily the examination is taken in French, Spanish, or German. Other languages may, upon departmental approval, be substituted. Students must complete the foreign language requirement no later than one calendar year following entrance to the program.

2. Advancement to candidacy involves successful passing of a written examination in general anthropology (covering archaeology, physical anthropology, and sociocultural anthropology). This examination is normally given as part of the core seminars (Anth 511, 550, 570) in the respective fields. Advancement to candidacy can only be accomplished before the close of the next-to-the-final term of work.
3. Approval of a thesis topic and the appointment of the thesis committee. The student develops a thesis proposal and submits it to the department faculty for approval and for the formal appointment of the thesis committee. In addition to advising and guiding the student's research and thesis preparation, the chairperson of this committee files a graduate degree program with the Office of Graduate Studies and Research. Students must have a master's thesis proposal submitted to and approved by the department faculty as soon as possible following admission to the program, but in no case later than the end of the seventh term (excluding Summer Session) following admission to the program. Students who fail to meet this requirement will be dropped from the program.

4. Presentation and approval of thesis.

5. Passing of an oral defense of thesis.

Courses

Courses with an asterisk (*) are not offered every year.

Anth 101 Introduction to Biological Anthropology (4)
The biological side of anthropology: primate paleontology, human evolution, modern human variation, and primate behavior.

Anth 102 Introduction to Archaeology (4)
The study of ancient and prehistoric cultures of the world. Introduction to the theories and techniques of archaeological investigation.

Anth 103 Introduction to Social/Cultural Anthropology (4)

Study of modern and recent societies in cross-cultural perspective. Focus on methods for understanding social and cultural differences and similarities.

Anth 300 The Modern World in Anthropological Perspective (4)

Examination of anthropological approaches to cultural diversity in a global context. Include cultural contact between the Fourth World and the industrialized world; health, nutrition, and poverty in different world areas; ecocide and ethnocide; political movements in the Fourth World; racism; and sexism.

Anth 301 Culture and Ethnography (4)

Cultural diversity and contemporary social issues examined through a series of ethnographic studies that highlight the methodology and efficacy of ethnographic research. Topics may include, but will not be limited to, issues to identity formation, gender, political economy, and transnational culture flows.

Anth 304 Social Theory (4)

Human social organization is examined in cross-cultural perspective. Analysis of kinship systems in stateless societies and of the state and other institutional arrangements in complex societies. Attention to the historical development of major theoretical approaches to social organization: structural functionalism, structuralism, human ecology, sociobiology, political economy, postmodernism. Designed for anthropology majors and minors. *Note:* This course is not approved for distribution credits. Recommended prerequisite: Anth 103.

Anth 305 Cultural Theory (4)

Explores the historical development of the concept of culture within anthropology and examines how this concept and the theories based on it have shaped both fieldwork practices and production of ethnographic texts. Designed for anthropology majors and minors. *Note:* This course is not approved for distribution credits. Recommended prerequisite: Anth 103.

Anth 311 Peoples and Cultures of Latin America (4)

Introduction to the peoples and cultures of Latin America, including Mexico, Central and South America, and the Caribbean. Course topics include religion, ecology, race and ethnicity, gender, urbanization, conflict, and social change.

Anth 312 Southeast Asian Societies and Cultures (4)

Introduction to the societies and cultures of Southeast Asia, the area encompassed today by the nations of Burma (Myanmar), Thailand, Laos, Cambodia, Vietnam, Malaysia, Singapore, Brunei, Indonesia, and the Philippines. Course topics explore the religious and cultural diversity of the area, as well as historical and cultural themes that traverse this region. Recommended prerequisite: students are strongly encouraged to complete Anth 103 before enrolling in this course.

[†] At least three of these courses (12 credits) must be in formally numbered graduate-level courses (i.e. courses numbered between 510-597 or 610-697). With graduate adviser approval, the remaining two courses (8 credits) may be in courses numbered 504 or 505 (i.e. Internship, Reading and Conference).

[‡] This course must be formally numbered and described in the PSU Bulletin. It may not be a course numbered 501/601, 502/602, 503/603, 504/604, 505/605, 506/606, 507/607, 508/608, 509/609.

Anth 313**Indian-White Relations (4)**

Consideration of North Americans since 1500: problems of social and cultural survival and change, as well as changing governmental policies, population, non-Indian conceptions of "The Indian."

Anth 314**Native Americans (4)**

Ethnographic survey of North American Indian cultures—from simple hunter-gatherers to complex empires—illustrating the patterns of adaptations to the variety of landscapes and historical processes.

Anth 315*American Culture (4)**

Central beliefs and core values of modern American society are examined from an anthropological perspective. Considers: value of constructs such as individualism and conformity; creation of public images; kinship and friendship; privacy; schools and neighborhoods; and conflicts involving ethnicity, social class, and gender. Questions the role of culture in our own lives, thereby gaining a greater understanding of social experience and of the concept of culture.

Anth 316**Traditional East Asia (4)**

Comparative ethnographic examination of peasant cultures in East Asia (China, Japan, Korea) prior to World War II. Recommended prerequisite: students are strongly encouraged to complete Anth 103 before enrolling in this course.

Anth 317**Peoples and Cultures of South Asia (4)**

Introduction to the peoples and cultures of South Asia, the area encompassed by India, Pakistan, Sri Lanka, Nepal, Bangladesh, Butan and the Maldiv Islands. Topics include cultural diversity, religious traditions, the caste system, class and gender hierarchies, and social change.

Anth 319*Traditional Cultures of Africa (4)**

A survey of the culture history and characteristics of the traditional (before Western influence) cultures of African peoples.

Anth 325**Culture, Health, and Healing (4)**

Introduction to the field of medical anthropology. Biocultural aspects of disease and healing. Comparison of healers and healing professions in Western and non-Western societies.

Interactions among culture, social relations, environment, and health. Topics include healers and healing roles, ethnomedicine and medical pluralism, clinical medical anthropology, and nutritional anthropology.

Anth 330**Anthropology of Folklore (4)**

Review of folklore, including legend, folktales, music, and dance, and its role in society. Emphasis will be on the study of folklore by anthropologists in both western and non-western contexts. Explores how folklore can reveal social relations, conflict and resistance, social change and gender relations.

Anth 333**Anthropology of Food (4)**

Explores biological and cultural aspects of past and present human food systems. Topics include nutrition, the cultural significance of

food, domestication of plants and animals, archaeological records of competitive feasting, global movement of foods during the colonial period, new revolutions in food technology, the politics and economics of contemporary food systems, and eating disorders such as obesity, anorexia, and bulimia.

Anth 350**Archaeological Method and Theory (4)**

A survey of current techniques and conceptual models applied in the discovery and analysis of archaeological materials. The fundamentals of archaeological research design, field survey, excavation, dating, cultural reconstruction, and the application of interdisciplinary studies. Recommended prerequisite: Anth 102.

Anth 361*European Prehistory (4)**

Methods and results of the study of prehistoric cultures of Europe from the earliest traces until the advent of written records. Recommended prerequisite: Anth 350.

Anth 362*African Prehistory (4)**

Methods and the results of the study of prehistoric cultures of Africa—with an emphasis on those south of the Sahara—from the earliest traces until the first historical records. Recommended prerequisite: Anth 350.

Anth 364*Pacific Northwest Prehistory (4)**

The prehistory of northwestern North America from its earliest occupants to the arrival of Europeans, with emphasis on developments during the last 5,000 years. Recommended prerequisite: Anth 350.

Anth 365**North American Prehistory (4)**

A survey of pre-contact cultures north of Mexico, from the first prehistoric migrant populations and early hunter-gatherers to the complex agricultural societies encountered by 15th and 16th century European explorers. Recommended prerequisite: Anth 350.

Anth 366*Mesoamerican Prehistory (4)**

Early cultures of Mesoamerica with an emphasis on the domestication of plants and animals and the development of civilization, focusing on the Maya and Highland Mexico. Recommended prerequisite: Anth 350.

Anth 367*East Asian Prehistory (4)**

The archaeology of China, Japan, and Korea from about 1 million years ago to the establishment of the Yamato State in Japan. Focuses on developments during the past 18,000 years, including the domestication of plants and animals, the spread of agriculture, and the development of civilization and regional states. Recommended prerequisite: Anth 350.

Anth 368*Oceania Prehistory (4)**

Reviews issues related to the peopling of Australia about 40,000 years ago, and subsequent voyaging and colonization of all parts of the South Pacific. Examines prehistoric cultural developments in Hawaii, New Zealand, Easter Island, and island groups in Micronesia. Examines evidence of human modification of island ecosystems. Recommended prerequisite: Anth 350.

†Anth 370**Paleoanthropology (5)**

Method and theory in paleoanthropology. A study of hominoid and human evolution from the Miocene to modern times. Emphasis will be placed on the fossil record and the interactions between biology and culture in the evolution of the human species. Four hours lecture and one biweekly laboratory. Recommended prerequisite: Anth 101.

†Anth 372**Human Variability (4)**

The causes and significance of biological variation in contemporary human populations—genetic, environmental and cultural factors. Recommended prerequisite: Anth 101.

Anth 373**Primate Ecology and Behavior (4)**

Study of origins, diversity, ecology, behavior, and conservation of living non-human primates. Primate ecology and behavior are explored from a comparative and evolutionary perspective. Emphasis is on primates in natural habitats rather than in captive settings, spanning apes, monkeys, and prosimians. Recommended prerequisite: Anth 101.

Anth 399**Special Studies (Credit to be arranged.)****Anth 401/501****Research (Credit to be arranged.)**

Consent of instructor.

Anth 404/504**Cooperative Education/internship (Credit to be arranged.)****Anth 405/505****Reading and Conference (Credit to be arranged.)**

Consent of instructor.

Anth 407/507**Seminar (Credit to be arranged.)**

Consent of instructor.

Anth 410/510**Selected Topics (Credit to be arranged.)**

Consent of instructor.

Anth 412/512**Research Methods in Social and Cultural Anthropology (4)**

Methods and techniques of research involving primary contacts with people, institutions and communities. The initiating and developing of projects designed to produce data for basic ethnographic, as well as applied, anthropological research. Recommended prerequisite: 12 credits in anthropology (Anth 304, 305 strongly recommended).

Anth 414/514*Culture and Ecology (4)**

A critical analysis of the interrelations of culture, social structure, and human ecology. Social organization as influenced by characteristic patterns of resource exploitation. The uses of natural environment from the viewpoint of the members of societies. Recommended prerequisites: Anth 304, 305.

Anth 415/515**Applied Anthropology (4)**

The application of anthropological knowledge to various kinds of projects and action programs in which cultural factors are critical elements. An examination of problems produced by rapid technological, social and cultural change, con-

†Anth 370 and Anth 372 are offered in alternating years.

licts of values, and unequal access to resources in multi-ethnic societies and “developing” nations; research leading to possible solutions is considered. Recommended prerequisite: 8 credits in anthropology (Anth 304, 305 strongly recommended).

***Anth 416/516
Urban Anthropology (4)**

Cross-cultural examination of urban phenomena including: variability in cultural and institutional patterning of cities, acculturation processes affecting urban populations, migration and social accommodation of rural and tribal peoples to urban settings, and the varieties of new subcultures that emerge in urban society. Recommended prerequisite: 8 credits in sociocultural anthropology or allied social science (Anth 304, 305 strongly recommended).

**Anth 417/517
Advanced Topics in
Native American Studies (4)**

In-depth examination of a current scholarly topic in the anthropology of native North America, especially in relation to colonialism and native resistance. Course will cover appropriate theory, as well as ethnographic and ethnohistorical materials. Recommended prerequisites: Anth 313 and 314 or two courses on Native Americans in any department.

**Anth 422/522
Contemporary American Indian Policy (4)**

An examination of current federal, state, and tribal law and policy pertaining to Indian affairs, including tribal government organization, government-to-government relations, economic development, natural and cultural resource management, health care, welfare, and education. Both reservation communities and the Portland metropolitan Indian community are considered. Student research is based on reading, field trips, and interviews with tribal officials and other policy professionals. Anth 313, 314 recommended.

**Anth 425/525
Perspectives in Medical Anthropology (4)**

Examination of critical, interpretive, and ecological perspectives in medical anthropology. Anthropological study of practice of biomedicine in the United States, and response to global diseases, including AIDS. Topics include the new medical technologies, social meanings of the body, bioethics, and the medicalization of social problems. Recommended prerequisite: Anth 325 or 8 credits of socio-cultural anthropology.

**Anth 426/526
Transnationalism and Migration (4)**

In-depth exploration of globalization, transnationalism, and migration. Topics include colonialism and the history of world connections, the global economic system, cultural imperialism, nationalism and identity, migration, refugees, tourism, and the commodification of local cultures. Recommended prerequisite: 8 credits in socio-cultural anthropology (Anth 304, 305 strongly recommended).

***Anth 428/528
Political Anthropology (4)**

Survey of major anthropological approaches to politics and power. Coverage includes structural functionalism, evolutionism, action theory, structuralism, political economy, and post-struct-

uralism. Ethnographic cases include both primitive politics and contemporary ethnic, class, and gender struggles in heterogeneous societies. Recommended prerequisites: 8 credits sociocultural anthropology (Anth 304, 305 strongly recommended).

***Anth 430/530
Myth, Ritual, and Symbol (4)**

A critical examination of both classic and recent anthropological theories in the cross-cultural study of symbolic forms. Recommended prerequisite: 8 credits in sociocultural anthropology (Anth 304, 305 strongly recommended).

***Anth 431/531
Advanced Topics in Latin American
Anthropology (4)**

In-depth exploration of a current topic in Latin American anthropology, especially in relation to the study of social change. Course materials will cover both theory and ethnography. Recommended prerequisite: either Anth 311 or two courses related to Latin America.

**Anth 432/532
Gender in Cross-Cultural Perspective (4)**

A cross-cultural examination of sex roles and gender beliefs including political, social, economic, and ideological aspects of the position of the sexes. Recommended prerequisites: upper-division standing and at least one basic course in sociocultural anthropology (Anth 103, 304, or 305).

**Anth 446/546
Chinese Culture and Society (4)**

Issues in the study of Chinese societies today, including those found in the Chinese mainland, Hong Kong, Taiwan, and Southeast Asia. In-depth examination of questions surrounding kinship organization, religious practice, ethnic identities, gender relations, and economic and political change. Recommended prerequisite: 8 credits in sociocultural anthropology (Anth 304 and 305 strongly recommended).

**Anth 447/547
Advanced Topics in South Asian
Anthropology (4)**

In-depth exploration of a current topic in South Asian anthropology, especially in relation to social change, nationalism and conflict, colonialism, or modernization. Course materials will cover both theory and ethnography. Recommended prerequisite: either Anth 317 or two related courses in Asian studies. (Anth 304, 305 strongly recommended.)

***Anth 451/551
History of Archaeology (4)**

A chronological survey of developments in the field of archaeological inquiry: major schools of thoughts, innovations in method and theory, key personalities and their contributions. Recommended prerequisites: Anth 350 plus at least one additional upper-division archaeology course.

**Anth 452/552
Lab Methods in Archaeology (4)**

Techniques and their applications in the analysis of materials recovered from archaeological sites. Course content will vary, emphasizing the study of various artifact types-lithics, ceramics, textiles, botanical remains, etc. (May be repeated with departmental consent. Maximum 8 credits) Recommended prerequisites: Anth 350 plus at

least one additional upper-division archaeology course.

**Anth 453/553
Archaeological Field Methods (4)**

The theory and practice of contemporary archaeological field investigation-research design, survey and reconnaissance, site excavation, sampling and recording techniques, cultural resource management. Recommended prerequisite: Anth 350.

**Anth 454/554
Archaeological Field School (6)**

Archaeological excavation of prehistoric or historic archaeological sites; or reconnaissance, survey and mapping of sites during a summer field project. Approximately 40 hours of field work per week for 6 weeks, with a week of laboratory work. Recommended prerequisite: Anth 350.

**Anth 455/555
Analysis of Faunal Remains (5)**

Reviews issues of recovery, identification, quantification, and interpretation of archaeological faunal remains. Seminar component involves discussion and critical review of recent faunal studies. Laboratory component introduces student to skeletal anatomy of vertebrates (with focus on fishes and mammals) and basic procedures used in faunal analysis. Recommended prerequisite: Anth 350.

**Anth 456/556
Issues in Cultural Resource Management (4)**

Examines the current cultural, legal and regulatory issues, problems, and frameworks affecting the management of cultural resources in North America and elsewhere in the world. Course coverage will include such topics as the laws affecting antiquities trafficking, and the relationships between indigenous peoples and archaeologists. Recommended prerequisite: Anth 350.

***Anth 461/561
Advanced Topics in Archaeology (4)**

In-depth exploration and analysis of a major current problem in archaeology. Problems may be substantive or theoretical. Recommended prerequisite: Anth 350.

***Anth 464/564
Topics in Northwest Prehistory (4)**

In-depth exploration of current problems in the study of Northwest Prehistory, particularly as it articulates with general theories of hunter-gatherer adaptations and cultural evolution. Recommended prerequisite: Anth 364.

***Anth 471/571
Advanced Topics in Paleoanthropology (4)**

In-depth exploration and analysis of current problems in the study of Paleoanthropology. Emphasis on articulation of evolutionary theory with fossils and other relevant evidence. Recommended prerequisites: Anth 370.

***Anth 472/572
Population Dynamics (4)**

The study of the principles of Mendelian and population genetics as they apply to the evolution of human populations and the maintenance of diversity in modern populations. Emphasis also is placed on the articulation of genetic methods with evolutionary theory. Recommended prerequisites: Anth 372; 2 years of high school algebra or equivalent; Bi 341 as a pre- or corequisite.

***Anth 478/578
Human Osteology (4)**

The identification and interpretation of human skeletal material from archaeological sites: the determination of age, gender, and population affinity; an introduction to paleopathology and the recognition of genetic and cultural variation. Recommended prerequisites: Anth 350 and Anth 370.

***Anth 479/579
Forensic Anthropology (2)**

Advanced techniques of human skeletal identification and their application to the solution of medico-legal (forensic) problems. Recommended prerequisites: Anth 478/578 or consent of instructor.

**Anth 490/590
The Anthropology of Violence (4)**

Theoretical and ethnographic exploration of the nature of violence. Topics include identity politics and nationalism; the biology of aggression and the cultural meanings of pain; state violence; symbolic and structural violence; and human rights. Recommended prerequisite: 8 credits in socio-cultural anthropology (Anth 304, 305 strongly recommended).

Anth 503 Thesis (Credit to be arranged.)

***Anth 511
Core Seminar in Social and Cultural Anthropology (4)**

A seminar that provides a methodological, theoretical, and substantive review and integration of anthropological materials in social and cultural

anthropology. Prerequisites: graduate standing in anthropology and consent of instructor.

***Anth 550
Core Seminar in Archaeology (4)**

A seminar that provides a methodological, theoretical, and substantive review and integration of anthropological materials in archaeology. Prerequisites: graduate standing in anthropology and consent of instructor.

**Anth 570
Core Seminar in Physical Anthropology (4)**

A seminar that provides a methodological, theoretical, and substantive review and integration of anthropological materials in physical anthropology. Prerequisites: graduate standing in anthropology and consent of instructor.

Applied Linguistics

122 East Hall
503-725-4088
www.ling.pdx.edu

**B.A.
Minor in Linguistics
Certificate in Teaching English
as a Second Language
M.A.—Teaching English to Speakers
of Other Languages
M.A.T and M.S.T. (General Arts
and Letters)**

Undergraduate programs

Linguistics is the scientific study of language, one of the most important aspects of being human. An interdisciplinary field, linguistics involves the physical sciences, the social sciences, and the humanities. Becoming a linguist does not mean learning to speak a lot of languages but rather studying the essence of language in general, what are its forms and functions.

Linguists ask questions such as: How do the sounds we utter relate to the meanings we express? What are the patterns and structure of linguistic sound systems? How are they produced? How is a word formed? What are the different parts of a sentence? How can a grammar be succinctly characterized? How do children learn language so quickly without being taught? How is language mapped in the brain? How can people speak more than one language and how do they switch from one to the other so rapidly? How is language different from other communica-

tion systems, such as that of animals or computer languages? How does language change through time? How do dialects diverge enough to become separate languages? What was the first language? Where did language originally come from?

The Department of Applied Linguistics is concerned with these as well as with related, more practical questions. How is language learned? How can second languages best be taught? How do we evaluate teaching and learning? What is involved in learning how to write and read? How does one's cultural background influence the way one learns another language? How do we model what language users know and how they use language? How does one create an alphabet for an unwritten language? How does one resuscitate a language that is in danger of disappearing? How can linguistics help to create natural language understanding systems? How does language as it's spoken and used differ from what we're told in grammar books?

At the undergraduate level the Department of Applied Linguistics offers a B.A. and a minor, as well as a certificate in teaching English as a second language. The major would serve either as preparation for graduate study or as an organizing theme for a rich undergraduate education. The department also administers programs in English as a Second Language and in English for Non-Native Residents. These programs aim to develop English proficiency in non-native speakers. The graduate degree prepares students to become teachers, language consultants,

and researchers in the field of language learning and teaching. The English as a Second Language and the English for Non-Native Residents programs are designed to develop non-native English speakers' competence in English.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. In addition to meeting the general University requirements for the B.A. degree, majors must complete an adviser-approved program to include:

	Credits
Ling 390 Introduction to Linguistics.....	4
Ling 407 Senior Seminar.....	4
Ling 411 Syntax.....	4
Ling 435 Applied Linguistics.....	4
Ling 490 History of the English Language.....	4
Linguistics electives (upper-division level).....	20
Two-terms of a non-Indo-European language.....	10
(If the language used to fulfill the University language requirement is non-Indo-European, the student may choose any other language to fulfill this requirement)	

Total 50

In all of these courses students must earn a "C" or better. By the end of the first quarter of admission to the program, students must consult with their assigned linguistics adviser to select the appropriate courses and areas of concentration. Upon completion the entire program must also be approved by the student's adviser.

Requirements for minor. To earn a minor in linguistics a student must complete 28 adviser-approved credits (12 credits of which must be taken in residence at PSU), to include the following:

	Credits
Ling 390 Introduction to Linguistics.....	4
Ling 411 Syntax or	
Ling 492 Structure of the English Language	4
Ling 490 History of the English Language.....	4
Linguistics electives (upper-division level).....	16
Total	28

All courses used to satisfy the department minor requirements must be graded C or above. Courses taken pass/no pass are not acceptable toward fulfilling department minor requirements.

Intensive Program in English as a Second Language (ESL)-Ling 110

Ling 110 is an intensive course, designed to develop the student's competence in listening, speaking, reading, and writing for academic purposes. Ling 110 is a year-round intensive program offered throughout the regular academic year as well as during the summer. There are five basic levels: beginning, lower-intermediate, intermediate, upper-intermediate, and advanced (Levels 1-5 below). Students may earn from 3 to 12 credits per term. Full-time students usually register for 12 credits. Students in levels 1 and 2 may not take other academic courses. Students in level 5 may enroll in some non-ESL courses with the approval of the program coordinator, if their academic record allows. Specifically, the Ling 110 course is divided into four major parts:

Part A: Grammar and sentence patterns
Part B: Reading and vocabulary development

Part C: Writing

Part D: Oral communication skills

Time is also devoted to American cultural patterns, and academic and cultural orientation.

To reinforce classroom instruction, students spend up to 10 hours a week in the language and computer laboratory, and in individual tutorials if necessary.

An essential function of the program is orienting international students to American life. Students are encouraged to take part in social and educational activities, both on campus and in the community.

Admission requirements

The student must submit a completed application form and other materials requested on the application to the Office of Admissions at Portland State University. If the student is accepted, the I-20 or other appropriate form will be issued.

Upon arrival the student must take a placement test in English administered by the department. Placement into courses will be based on these test results as well as on TOEFL score reports if available.

Qualified students interested in English-only study can participate in an Intensive English Language Program offered through a partnership between Applied Linguistics and Extended Studies. For information and application materials, contact the Department of Applied Linguistics.

Writing for Non-Native Residents (WNNR)-Ling 115

A two-level course designed to help non-native residents develop skills and confidence in writing for college. Both levels will focus on responses to readings, instruction in grammar, and understanding of assignment instructions. Level 1 will stress study skills and essay format. Level 2 will focus on higher level skills of analysis, evaluation, synthesis, and incorporating source material into an essay. Placement will take place in class on the first day of the quarter.

Certificate in Teaching English as a Second Language (TESL)

The program is administered by the Department of Applied Linguistics. It is specifically designed to prepare persons to teach English to speakers of other languages in the United States and abroad. In contrast with the M.A., TESOL, this certificate will fit into the programs of majors in a wide variety of fields, such as foreign languages, speech, education, and the social sciences. Candidates may enroll in the program as undergraduates or as post-baccalaureate students.

Admission requirements

1. Admission to Portland State University.
2. English proficiency in spoken and written English if the student is not a native speaker of English (a TOEFL score report of 550 or 213 (computer-based) or higher is required for proof of proficiency). The student is to be tested upon arrival. (Required for both certificate and M.A. programs.)
3. Two years proficiency in at least one foreign language if the student is a native speaker of English.

Course requirements

In addition to fulfilling minimum University or graduate school requirements, the following adviser-approved courses are required:

	Credits
Ling 390 Introduction to Linguistics.....	4
Ling 438 Second Language Acquisition	4
Ling 492 Structure of the English Language	4
Ling 471 Understanding the International Experience.....	4
Ling 477, 478 TESOL Methods.....	8
Ling 475 Curriculum Design & Materials Development.....	4
Ling 439 Language Assessment	4
Linguistics electives (upper-division level).....	8
Total	40

All courses used to satisfy certificate course requirements must be upper-division courses in which the student earns a mark of "C" or above. Courses taken under the undifferentiated grading option (PINP) are not acceptable toward fulfilling department requirements. Before the end of the first quarter after beginning the program, the student is required to consult with a departmental adviser to select the appropriate courses and sequence. The entire program must be approved by the adviser.

Some courses used in the TESL certificate program can also be applied to obtaining the ESL/bilingual endorsement for public school teachers. Students seeking this endorsement must plan a program through a departmental adviser and must complete 100 hours of practice in the K-12 setting.

Graduate program

Master of Arts in Teaching of English to Speakers of Other Languages. The M.A., TESOL degree qualifies its recipients to teach English at an advanced level to speakers of languages other than English. It is increasingly the degree of preference for employers both in the United States and abroad.

Admission requirements

1. Admission to graduate study at Portland State University.
2. Proficiency in English if the student is not a native speaker of English and doesn't hold a degree (B.A.) from an American university: minimal TOEFL score of 600 or 250 (computer-based).
3. At least two years' proficiency in at least one foreign language if the student is a native speaker of English. This requirement may be completed while working toward the M.A. degree.

Degree requirements

In addition to the minimum graduate school requirements, students must have an adviser-approved program that meets the following criteria. (For those students who have completed the Certificate in TESL, certain adviser-approved courses will be used to substitute for some of the following requirements.)

Prerequisites: Ling 390 Introduction to Linguistics or equivalent, Ling 492 Structure of English or equivalent or departmental grammar exam. Students are encouraged to complete these requirements prior to formal admission to the M.A. program.

Credits

Language Education/Applied Linguistic Theory...20
Required Courses

Ling 538 Second Language Acquisition
Ling 571 Understanding the International Experience or
Sp 515 Problems in Intercultural Communication
Ling 577 TESOL Methods I
Ling 578 TESOL Methods II
As part of the TESOL Methods requirement, students must submit a portfolio documenting a minimum of 70 hours of practical experience.

4 credits from the following

Ling 509 Practicum
Ling 539 Language Assessment
Ling 565 Administration of ESL/EFL Programs
Ling 570 Grammar for TESOL
Ling 575 Curriculum Design and Materials Development
Ling 576 Corpus Linguistics in Language Testing
Foundations in Language/ Linguistic Theory16
Linguistic Analysis

Choose 4 credits from the following courses:

Ling 513 Linguistic Semantics
Ling 514 Linguistic Pragmatics
Ling 515 Linguistic Phonetics
Ling 516 Discourse Analysis
Ling 520 Historical-Comparative Linguistics

Choose 4 credits from the following courses:

Ling 511 Syntax
Ling 512 Phonology

Choose 8 credits from Language and Society and/or Language and the Mind

Language and Society
Ling 532 Sociolinguistics
Ling 580 Bilingualism
Ling 581 World Englishes
Ling 582 Pidgins and Creoles

Language and Mind

Ling 533 Psycholinguistics
Ling 537 First Language Acquisition
Ling 545 Linguistics and Cognitive Science

Research Design and Culminating Experience.....10

Ling 560 Research Design: Methodology (2)
Ling 561 Research Design: Applications (2)
6 additional credits as specified below for thesis, project or comprehensive exam option (6)

Total 46

All courses need to be passed with a grade of "B" or better in order to count toward this degree. Ling 505 (Reading and Conference), Ling 507 (Seminar) and Ling 510 (Selected Topics) will count for Language Education/Applied Linguistic Theory, Foundations in Language/ Linguistic Theory, Language and Society/ Mind, or Research Design depending on course content, as determined by the instructor.

By the end of the first quarter after admission to the program, students are required to consult with a departmental adviser to select the appropriate courses and areas of concentration. The entire program must be approved by the adviser and the department graduate committee.

In order to complete the degree the student will consult with an adviser to choose one of the following options for the Culminating Experience: (1) Thesis. The thesis requires students to conduct an empirical analysis of data that they have gathered to answer a research-oriented question that deals with a specific aspect of TESOL or applied linguistics. Students in the Thesis option must take 6 credits of Ling 503 (Thesis). (2) Project. The project addresses a practical problem in the field of TESOL or applied linguistics and presents a solution to it. Rather than an academic thesis, the project may, for example, take the form of a curriculum plan for a specific course or a short article about teaching technique for a teaching publication. Students in the Project option must take 4 credits of Ling 507 (Seminar: Research Writing) and 2 credits of Ling 501 (Research: Special Project). (3)

Comprehensive Exams. The written comprehensive examinations will synthesize theoretical and practical knowledge covered in the program. Students in the Exam option must take 4 credits of Ling 507 (Seminar: Research Writing) and 2 credits of Ling 501 (Research: Comprehensive Exams). The thesis, project, and comprehensive exams will conform to current departmental guidelines for details such as thesis proposal meetings, exam scoring, and formatting of the project.

Following successful completion of a thesis or project, students will take a final oral examination covering the topic of their work.

Persons interested in applying for the M.A., TESOL Program should write to the Department of Applied Linguistics, or visit the department's Web site www.ling.pdx.edu, for additional information.

Master of Arts in Teaching or Master of Science in Teaching. For information on the Master of Arts in Teaching and the Master of Science in Teaching (General Arts and Letters), see page 133.

Courses

Courses with an asterisk () are not offered every year.*

Ling 110 English as a Second Language (4-12)

An intensive course designed to develop the non-native speaker's competence in listening, speaking, reading, and writing. For students enrolled in the ESL program only. See full description above.

Ling 115

Writing for Non-native Residents (WNNR) (4)
See description above

Ling 199

Special Studies (Credit to be arranged.)

Ling 232

Language and Society (4)

General introduction to what languages are like, how they are used and how they vary, focusing on how language interacts with society and culture. Some questions that will be addressed include: Why doesn't everyone speak the same language? Do men and women talk differently? What is the relationship between endangered species and endangered languages? How does language influence our thoughts or behaviors?

Ling 233

Language and Mind (4)

General introduction to what languages are like, how they are used, and how they vary, focusing on how language is learned and produced. Some questions that will be addressed include: Is language innate? Is it unique to humans? How is language related to thought or to culture? How is language represented in the brain? How is language acquired in different cultures and different circumstances?

Ling 299

Special Studies (Credit to be arranged.)

Ling 390

Introduction to Linguistics (4)

A general introduction to the study of linguistics, including a basic survey of phonology, morphology, syntax, and semantics, brief overview of other topics such as language acquisition and language in social contexts, a brief sketch placing English in historical perspective, and a preliminary examination of principles in modern language study.

Ling 399

Special Studies (Credit to be arranged.)

Ling 401/501

Research (Credit to be arranged.)

Ling 404/504

Cooperative Education/Internship (Credit to be arranged.)

Ling 405/505

Reading and Conference (Credit to be arranged.)

Ling 407/507

Seminar (Credit to be arranged.)

Ling 408/508

Workshop (Credit to be arranged.)

Ling 409/509

Practicum (Credit to be arranged.)

Ling 410/510

Selected Topics (Credit to be arranged.)

Ling 411/511

Syntax (4)

Introduction to modern grammatical theory, its methods, and findings. Presents patterns of argumentation, models, and basic results of research. Prerequisite: Ling 390 and one other course in linguistics.

Ling 412/512

Phonology (4)

How sounds pattern and how they are used in the world's languages, how those patterns should be represented, and what theories have been advanced to explain those patterns. Some historical background to the subdiscipline and some training in linguistic analysis and argumentation. Prerequisite: Ling 390. Recommended: Ling 415/515.

Ling 413/513
Linguistic Semantics (4)

Survey of linguistic approaches to meaning, including approaches from logic and philosophy of language. Addresses general questions of meaning, methods for studying meaning, and the relationship of semantic theory to theories of syntax and pragmatics. Prerequisite: Ling 390. Recommended: Ling 411 or 492.

Ling 414/514
Linguistic Pragmatics (4)

A study of current theories of language use, particularly contextual and functional aspects of communication. Prerequisite: Ling 390. Recommended: Ling 411 or 413.

Ling 415/515
Linguistic Phonetics (4)

Introduces the sounds of the world's languages with a concentration on English. Practical exercises designed to develop skills in production, discrimination, and phonetic transcription. Applications to speech technology and speech pathology. Prerequisite: Ling 390 or concurrent enrollment.

***Ling 416/516**
Discourse Analysis (4)

The examination of forms and functions in discourse. Using several analytic procedures for understanding how conversation works, especially as applied to language learning and teaching. Prerequisite: Ling 390.

***Ling 420/520**
Historical and Comparative Linguistics (4)
 Study of language relationships and language change. Topics include the genetic classification of languages, language and prehistory, methods of historical reconstruction, and language contact. Prerequisite: Ling 390. Recommended: Ling 412/512.

† **Ling 422/522**
How Do People Learn a Second Language (3)

Gain a historical perspective of language teaching and look at current language learning and teaching models. Examine variables involved in first and second language acquisition, including the effect of the first language, socio-economic factors, and instruction.

† **Ling 423/523**
Taking Stock: Assessment and Evaluation in Programs With Language Minority Students (2)

Consider ways to expand the assessment domain so that it describes the full range of student work and includes all populations. Learn about technical standards needed to ensure fair, accurate, and meaningful information. Discuss using assessment results to focus school and district services for language minority students.

Ling 432/532
Sociolinguistics (4)

Examines the role of language in society and how social factors can influence language. The social issues around language including language policy and language ideology. Prerequisite: Ling 390.

***Ling 433/533**
Psycholinguistics (4)

A survey of psycholinguistics and the psychology of language, focusing on the general question of the relation between human language and human beings. Prerequisite: Ling 390.

***Ling 435/535**
Applied Linguistics (4)

An examination of current areas of applied linguistics research. Prerequisite: Ling 390.

Ling 437/537
First Language Acquisition (4)

Introduction to main aspects of first language acquisition in childhood, from infancy to the early school years. Examines comprehension and production of the structural and social aspects of language. Includes discussion of language acquisition theories from linguistic, psycholinguistic and sociolinguistic perspectives. Research project based on collection and analysis of child language data required. Prerequisite: Ling 390.

Ling 438/538
Second Language Acquisition (4)

Introduction to main aspects of second language acquisition from sociolinguistic and psycholinguistic perspectives. Examines comprehension and production, stages in acquisition, cognitive processes, linguistic environment, individual variables, relationship between first and second language. Research project based on collection and analysis of language-learner language. Prerequisite: Ling 390.

Ling 439/539
Language Assessment (4)

Theoretical background and practical considerations in the conduct of language assessment. Students will explore traditional, quantitative methods as well as alternative, qualitative methods for systematically gathering information to inform decisions about individual language ability. Prerequisite: Ling 390; 477.

***Ling 445/545**
Linguistics and Cognitive Science (4)

Presents current developments in linguistic theory, and in psychological theories of perception, cognition, and information processing (with special focus on language processing). Examines the fusion of linguistic and psychological theories into the rapidly growing field of cognitive science. Prerequisite: Ling 390. Recommended: Ling 433.

Ling 470/570
Grammar for TESOL (4)

A study of how to teach difficult grammatical structures in English, how to resolve problems and questions that frequently arise in the ESL classroom, and how to adapt and supplement ESL grammar tests. Prerequisites: Ling 390; 492 or departmental grammar test.

Ling 471/571
Understanding the International Experience (4)

Examination of communication-based dimensions of an international or intercultural experience, including teaching English to speakers of other languages. Development of strategies and activities required to meet the challenges of teaching, working, or doing research in an international/intercultural setting. All linguistics students must register for Ling 471/571, however, this course is also offered as Intl 471 and BSt 471. Course may be taken only once for credit.

***Ling 474/574**
ESL in the Workplace (4)

Theory and practice in developing programs to teach English language programs in the workplace. Students observe workplace programs, examine case studies, and work in teams to assess needs, write curriculum, and develop materials for a local company employing non-native speakers. Recommended prerequisite: Ling 477 or teaching experience.

***Ling 475/575**
Curriculum Design and Materials Development in TESOL (4)

Principles of curriculum design and instructional materials development in teaching English to speakers of other languages. Students work in teams to assess needs, design syllabus, develop lessons and materials, plan evaluation for English language program. Covers structural, notional and communicative, task-based, and content-based syllabus. Prerequisite: Ling 390; Ling 477 or instructor's approval. Recommended: Ling 478 or teaching experience.

Ling 476/576
Corpus Linguistics in Language Teaching (4)

Introduction to the methods of corpus linguistics, a type of computer-assisted linguistic analysis, applied to second/foreign language teaching and materials development. Includes weekly computer lab sessions conducting corpus linguistics work. Prerequisite: Ling 390.

Ling 477/577, 478/578
TESOL Methods (4, 4)

Approaches, methods, and techniques in teaching English to speakers of other languages, covering theoretical material and its applications to language teaching. Requires 25 hours/term of observation, tutoring, and practice teaching, and additional 5-10 out-of-class hours for 578. Courses must be taken in sequence. Ling 477/577: Introduces current knowledge concerning language teaching methodology and second language learner characteristics. Recommended prerequisites: 471/571, 438/538. Ling 478/578: Emphasizes techniques for teaching and classroom management.

***Ling 480/580**
Bilingualism (4)

Survey of issues involved with bilingualism throughout the world. Explores the linguistic, sociolinguistic, and psycholinguistic aspects of simultaneous and subsequent acquisition of one or more languages. Includes perspectives of individual and societal bilingualism, and examines issues involved with bilingual language use, language processing, education, language planning, and language and identity. Prerequisite: Ling 390.

***Ling 481/581**
World Englishes (4)

Explores the role of English as a world language. Using film, audio tapes, and English language newspapers from around the world, students will become familiar with such Englishes as Malaysian English, Indian English, Nigerian English, and Filipino English. Prerequisite: Ling 290 or 390.

† Ling 422/522 and Ling 423/523 are to be used only for ESL/bilingual endorsement for public school teachers, offered through Continuing Education. These courses cannot be used as linguistics electives or toward the TESL certificate or TESOL master's degree without explicit approval by the Applied Linguistics department.

Ling 482/582*Pidgins and Creoles (4)**

Introduces students to the language varieties arising in contact situations. Concentration on African and New World creoles (and African American Vernacular English). Considers the formation of pidgins and creoles in terms of both first and second language acquisition. Looks at the social factors involved in their creation. Prerequisite: Ling 390.

Ling 490/590**History of the English Language (4)**

A survey in which the development of English phonology, morphology, vocabulary, and syntax is studied through the application of modern linguistic criteria and methodology. Recommended prerequisite: Ling 390.

Ling 492**Structure of the English Language (4)**

A study of English structure and modern approaches to grammar. This course satisfies state standards for teaching English. Recommended prerequisite: Ling 390.

Ling 503**Thesis (Credit to be arranged.)****Ling 560****Research Design for Applied Linguistics (2)**

Presents the major designs for research in applied linguistics. Introduces basic quantitative and qualitative methodological concepts. Provides a basis to critically read research literature in TESOL and applied linguistics. Students write a preliminary review of the literature and research question(s) for their M.A. thesis proposal. Prerequisite: admission to the M.A. TESOL program and at least 16 credits in applied linguistics.

Ling 561**Research Methodology for Applied Linguistics (2)**

Second course in a two-course sequence required for M.A. TESOL students, focusing on data collection and analysis. Builds upon introduction to methods in Ling 560. Students work with data, using both quantitative and qualitative techniques. Students write a preliminary draft of the methods section for their M.A. thesis proposal. Prerequisite: Ling 560 (no concurrent enrollment allowed).

Ling 565*Administration of ESL/EFL Programs (4)**

Analyzes models of intensive and non-intensive programs in terms of goals, students, levels, staff, schedules, materials and approaches based on resources and facilities available. Discusses theoretical, financial and pedagogical issues in designing and maintaining a successful program. Prerequisite: Ling 390; 477.

Biology

246 Science Building II

503-725-3851

www.bio.pdx.edu

B.A., B.S.

Minor

Secondary Education Program

M.A., M.S.

M.A.T. and M.S.T. (Science/Biology)

Ph.D.—Environmental Sciences and

Resources: Biology

Undergraduate programs

The biology program is designed to prepare students for careers in biological research, development, and teaching, and in health sciences, nursing, agriculture, forestry, and other applied fields. It also provides the necessary background for prospective teachers and for advanced study leading to graduate degrees in the more specialized fields of the biological sciences.

A student planning to enter medicine, dentistry, or other professional fields should consult the catalog of the professional school to which the student intends to apply following preprofessional work in biology and other sciences at Portland State. Biology is also a teaching endorsement area in the program of secondary education.

The Oregon University System maintains the Institute of Marine Biology near Coos Bay and the Hatfield Marine Sciences Center in Newport on the Oregon coast. PSU also

participates in programs at the Malheur Field Station in southeastern Oregon.

Biology majors are encouraged to spend a summer at one of these institutions.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree Requirements

Requirements for major. In addition to satisfying general University requirements, a student majoring in biology must meet general department major requirements and specific requirements in one of the biology major options.

General requirements are completion of two terms of statistics or two terms of calculus; three terms of science majors' introductory chemistry with laboratory; one term of organic chemistry; Ph 201, 214; and 12 elective credits from geology, physics, or chemistry at the 200 level or higher. All biology majors must complete at least 60 credits in biology including three terms of science majors' introductory biology with laboratory. Of the 60 credits in biology at least 44 must be upper-division, including one term of genetics (Bi 341, Introduction to Genetics) and fulfillment of one of the options listed below. Students must receive a grade of C- or better in all upper-division courses specifically listed in the four options.

Biology courses taken pass/no pass are not acceptable toward fulfilling departmental major requirements, with the exception of courses numbered Bi 401, 404, 405, 406, and 407 which are only offered pass/no pass. Of the 60 credits required in biology, at least 46 credits must be in courses other than Bi 401, 404, 405, 406, and 407. The remaining 14 credits may include no more than a total of 6 credits in Bi 401, 404, 405, and 406.

Biology majors interested in the Biology Honors program may obtain information on that in the Science Support Office.

Option I: General Biology

	Credits
Bi 251-253 Principles of Biology.....	15
Bi 341 Genetics.....	4
At least two of the following courses:	
Bi 338 Introduction to Molecular Biology	4
Bi 336 Cell Biology.....	5
Bi 357 General Ecology.....	4
Upper-division electives.....	32-33

Courses taken as upper-division biology electives must include at least one other upper-division course in each of the following areas:

Botany

Bi 433 Morphology of Vascular Plants
Bi 435 Plant Systematics
Bi 441 Plant Physiology
Bi 471 Plant Ecology
ESR 445 Phytoplankton Ecology

Zoology

Bi 387 Vertebrate Zoology
Bi 413 Herpetology
Bi 414 Ornithology
Bi 415 Mammalogy
Bi 461 Freshwater Invertebrate Zoology

Microbiology

Bi 480, Bi 488 Microbiology and Laboratory
Bi 421 Virology
Bi 430 Theory of Recombinant DNA Techniques

Evolutionary biology

Bi 426 Evolution
Bi 427 Evolutionary Genetics
Bi 428 Human Genetics
Bi 476 Population Biology

Several different avenues of study may be followed under the general track. These include emphases in ecology, evolution, botany, microbiology, and field biology. Please consult your adviser for more details. The remaining courses taken to meet upper-division elective requirements in biology may be selected from any upper-division courses offered by the Department of Biology (courses with a "Bi" prefix).

Option II: Organismal Biology

	Credits
Bi 251-253 Principles of Biology.....	15
Bi 341 Genetics.....	4
Bi 336 Cell Biology.....	5
Bi 357 General Ecology.....	4
Bi 426 Evolution.....	4
Upper-division electives.....	28-29

Courses taken as upper-division biology electives must include at least one course from each of the following sub-areas:

Systems physiology

Bi 301, Bi 302, Bi 303 Human Anatomy and Physiology (4, 4, 4)
Bi 417 Mammalian Physiology (4)
Bi 418 Comparative Animal Physiology (4)
Bi 419 Animal Physiology Laboratory (4)
Bi 441 Plant Physiology (4)
Bi 462 Neurophysiology (4)
Bi 463 Sensory Physiology (4)

Structure/systematics/development

Bi 326 Comparative Vertebrate Embryology (5)
Bi 328 Comparative Vertebrate Anatomy (5)
Bi 387 Vertebrate Zoology (6)
Bi 413 Herpetology (6)
Bi 414 Ornithology (6)
Bi 415 Mammalogy (6)
Bi 416 Marine Mammals (6)
Bi 433 Morphology of Vascular Plants (4)
Bi 435 Plant Systematics (4)
Bi 455 Histology (6)

Ecology/genetics/evolution/behavior

Bi 360 Introduction to Marine Biology (3)
Bi 412 Animal Behavior (4)
Bi 427 Evolutionary Genetics (4)
Bi 428 Human Genetics (4)
Bi 471 Plant Ecology (4)
Bi 472 Natural History (3)
Bi 476 Population Biology (4)
ESR 475 Limnology and Aquatic Ecology (4)

The remaining courses taken to meet upper-division elective requirements in biology may be selected from any upper-division courses offered by the Department of Biology (courses with a "Bi" prefix).

**Option III: Microbiology/
Molecular Biology**

	Credits
Bi 251-253 Principles of Biology.....	15
Bi 336 Cell Biology.....	5
Bi 337 Cell Biology Lab.....	2
Bi 338 Introduction to Molecular Biology.....	4
Bi 341 Genetics.....	4
Bi 480, Bi 488 Microbiology and Laboratory.....	6
Ch 350 or Ch 490, 491 Biochemistry.....	4 or 6

Upper-division electives (must include at least 12 credits from the following list):.....24

Bi 421 Virology
Bi 423 Microbial Ecology
Bi 424 Molecular Genetics
Bi 428 Human Genetics
Bi 430, 431 Recombinant DNA Techniques and Laboratory
Bi 456 Developmental Biology
Bi 481 Microbial Physiology
Bi 482 Environmental Microbiology
Bi 486 Pathogenic Bacteria
Bi 487 Immunology

The remaining courses taken to meet upper-division elective requirements in biology may be selected from any upper-division courses offered by the Department of Biology (courses with a "Bi" prefix).

The department offers a Certificate in Biotechnology in cooperation with Portland Community College. Students interested in obtaining the Certificate in Biotechnology should contact Dr. Lisa Weasel for information on specific requirements for the certificate.

Option IV: Botany

	Credits
Bi 251-253 Principles of Biology.....	15
Bi 341 Genetics.....	4
At least two of the following courses:	
Bi 338 Introduction to Molecular Biology.....	4
Bi 336 Cell Biology.....	5
Bi 357 Ecology.....	4
Upper-division biology electives.....	28-29

Courses taken as upper-division biology electives must include at least four courses from the lists below and at least one course from each of the following sub-areas.

Structure and function

Bi 433 Morphology of Vascular Plants
Bi 434 Plant Anatomy
Bi 441 Plant Physiology
ESR 445 Phytoplankton Ecology

Evolution and systematics

Bi 426 Evolution
Bi 435 Plant Systematics
Bi 476 Population Biology

Ecology

Bi 410 Reproductive Ecology of Plants
Bi 471 Plant Ecology
ESR 475 Limnology and Aquatic Ecology

The remaining courses taken to meet upper-division elective requirements in biology may be selected from any upper-division courses offered by the Department of Biology (courses with a "Bi" prefix).

Requirements for minor. To earn a minor in biology, a student must complete at least 27 credits (at least 9 credits of which must be taken in residence at PSU), to include the following:

	Credits
Bi 251, 252, 253 Principles of Biology.....	15
Upper-division credits to include at least one course from each of the following three areas....	15

Area I: Cellular Biology

Bi 336 Cell Biology
Bi 341 Introduction to Genetics
Bi 480 Microbiology

Area II: Organismal Biology

Bi 301, 302, 303 Human Anatomy and Physiology
Bi 326 Comparative Vertebrate Embryology
Bi 328 Comparative Vertebrate Anatomy
Bi 334 Systematic Botany
Bi 387 Vertebrate Zoology
Bi 433 Morphology of Vascular Plants
Bi 434 Plant Anatomy
Bi 455 Histology
Bi 461 Freshwater Invertebrate Zoology

Area III: Ecological and Evolutionary Biology

Bi 357 General Ecology
Bi 360, 361 Introduction to Marine Biology and Laboratory
Bi 423 Microbial Ecology
Bi 426 Evolution

Total 30

Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling department minor requirements. Bi 401, 404, 405, 406, and 407 are not allowed for the minor. Additional courses may be required as prerequisites.

SECONDARY EDUCATION**Adviser: M. Murphy, L. Weasel**

Students who wish to teach biology in secondary schools should complete one of the two programs shown. Courses are to be taken for differentiated grades, except for those offered for pass/no pass only. Students must have at least a 3.00 GPA in the recommended science courses and must earn at least a C in each course of the endorsement area. Students should also take Ed 420 Introduction to Education and Society; Psy 311; and one of the following: Sp 100, 229, 220, 262, or 324.

Biology majors. The student must complete a biology major's program as outlined above, to include a course each in microbiology, ecology, genetics, and evolution. (See adviser.)

	Credits
Biology (see adviser).....	60
Mathematics (see above).....	8
Chemistry (see above).....	19
Physics (see above).....	5
Electives (see above).....	12
Total	<u>104</u>

Nonbiology majors

One year-long sequence in introductory biology . 9
Bi 234, 235 Elementary Microbiology.....6
One course each in both anatomy and physiology 8
Bi 341 Introduction to Genetics.....4
Bi 357 General Ecology.....4
Bi 426 Evolution.....4
Biology elective in botany
or field-oriented course.....4

Biology total 39

Physical science electives
as approved by adviser.....18

Total 57

Graduate programs

The Department of Biology offers graduate study leading the Master of Arts or Master of Science, and the Master of Arts in Teaching or Master of Science in Teaching Science/Biology. The department also participates in the Environmental Sciences and Resources Doctoral Program. Specialized studies in the basic principles and techniques of the discipline, when combined with multidisciplinary environmental sciences courses and seminars, will partially fulfill the requirement for the Ph.D. in environmental sciences and resources. For information relative to the Ph.D. program in environmental sciences and resources/biology, see page 121.

Admission requirements

In addition to the instructions for admission to the graduate program as they appear on page 62, the department requires the following information from each applicant to the M.A./M.S. program in biology and the Ph.D. program in environmental sciences and resources:

1. Satisfactory scores on the Graduate Record Examination (GRE), to include results from the aptitude test and the advanced biology examination.
2. Three letters of evaluation from persons qualified to assess the applicant's promise as a graduate student.

The student should contact the department for a statement of current admission policy.

The prospective student should realize that a high GPA and acceptable GRE scores do not guarantee admission to the graduate programs in biology. This is because of the many departmental factors which must be taken into consideration, such as availability of appropriate advisers and research space.

Degree requirements

University master's degree requirements are listed on page 70. Specific departmental requirements are listed below. All M.S., M.S.T., M.A.T. students are required to take Bi 598 Graduate Research Prospectus, and Bi 599 Graduate Grant Writing, in the fall and winter quarters, respectively, following admission to the program.

Master of Arts or Master of Science. Satisfactory completion of at least 45 credits of approved graduate-level courses is required for a master's degree. The student must complete at least 30 credits in the field of biology. No more than 9 credits

may be in Bi 503 Thesis. No more than a total of 15 credits may be in seminar, reading and conference, research, and thesis. A maximum of 15 credits may be programmed as electives in fields related to biology in consultation with the degree adviser. Successful completion of a final oral examination and a thesis is required.

Master of Arts in Teaching or Master of Science in Teaching. The College of Liberal Arts and Sciences offers the M.A.T./M.S.T. degrees in Science/Biology. In consultation with the graduate adviser, the student should establish the degree program before the completion of 15 credits of coursework. The program must include a minimum of 45 credits in approved graduate courses, to include a minimum of 24 credits in the area of concentration. At least 9 credits, but no more than 15 credits, must be in education courses and must include Ed 520 Introduction to Education and Society. The 45 credits required must include 6 credits in either Bi 501 Project Track: Research Project relating to biology teaching (i.e. curriculum module, grant proposal, community development project) as approved by students committee; or Bi 504 Practicum Track: 6 credits in practicum/internship/community outreach experience as approved by student's committee. In order to fulfill requirements for the degree, the student must satisfactorily complete the degree program and pass both a final written examination and a final oral examination.

Continuing teaching license. The requirements for the continuing teaching license include satisfactory completion of 45 credits of upper-division and graduate work earned subsequent to receipt of a bachelor's degree. The 45 credits are in addition to those required for the initial teaching license. For the continuing endorsement in biology, the student must take at least 15 credits of adviser-approved graduate-level work distributed to strengthen the student's background in science. Although no specific courses in science are required for the continuing endorsement, combined undergraduate and graduate preparation must include at least 36 credits in biology and must include specific courses. Each student's program is tailored to meet the needs of the individual and the requirements of the continuing endorsement and the continuing license. See page 225 for the required education courses.

Doctor of Philosophy in environmental sciences and resources—biology. In addition to the program requirements listed on page 127, the student is required to take Bi 598 Graduate Research Prospectus, and Bi 599 Graduate Grant Writing, in the fall

and winter quarters, respectively, following admission to the program. The student must also have taken a departmental Ph.D. comprehensive exam by the fifth quarter after entering the program, followed the next quarter by formal defense of their Ph.D. prospectus.

Courses

Courses with an asterisk () are not offered every year.*

Bi 101, 102, 103 General Biology (3, 3, 3)

The fundamental principles of life as they apply to both plants and animals. If taken after completing courses with similar materials credit will be restricted Concurrent enrollment in Bi 104, 105, 106 required.

Bi 104, 105, 106 General Biology Labs (1, 1, 1)

Laboratory to accompany General Biology (Bi 101, 102, 103). Previous or concurrent enrollment in 101, 102, 103 is required. One 2-hour laboratory per week.

***Bi 161 Food, Plants, and People (3)**

The role of plants in human affairs as sources of food, fiber, fuel, beverages, and drugs. This course does not satisfy the Department of Biology botany course requirement and is intended for nonmajors.

***Bi 162 Indoor Plants (3)**

An in-depth study of the botany, identification, cultural characteristics, propagation, care and maintenance, and effective utilization in interior design of common foliage plants. Not intended for biology majors.

***Bi 163 Organic Gardening (3)**

An in-depth study of the principles and practices of modern home gardening. Plants, soils, and climates are studied in relation to the production of vegetables, herbs, flowers, and perennial food plants. The organic and chemical approaches to gardening are discussed with the goal of helping students to formulate intelligently their own philosophy of gardening. Not intended for biology majors.

***Bi 175 Evolutionary Concepts (3)**

This class is designed to provide background in evolutionary concepts for nonmajors and to address current issues in evolution as they are perceived and are being investigated by various members of our faculty in biology and geology. It is a combined lecture and discussion class and will include occasional guest lecturers presenting their research and views on various topics in evolution.

Bi 199 Special Studies (Credit to be arranged.)

Bi 234 Elementary Microbiology (4)

Introduction to the basic and applied aspects of microbiology, with special emphasis on the role of microorganisms in human affairs. Such fields as nursing, environmental protection, food

technology, and public health are given special attention. Topics will include microbial growth and death, human disease, environmental microbiology, food and industrial microbiology, microbial aspects of water and sewage treatment, aspects of microbial gene flow, genetic engineering, and vaccine development.

Bi 235**Elementary Microbiology Laboratory (2)**

The laboratory is designed for science majors and others who need practical experience in culturing and observation of microorganisms. Topics will include culture techniques, use of the microscope for observation of microorganisms, and procedures for study of microorganisms in the laboratory and field. Two 2-hour laboratory periods. Recommended prerequisite: Bi 234 or concurrent enrollment in Bi 234.

Bi 251, 252, 253**Principles of Biology (5,5,5)**

Study of the basic principles of living organisms. The course will study both plants and animals and topics will include cell structure, energy production synthesis, nutrition, genetics, evolution, classification, excretion mechanisms of response, reproduction and development, and ecology. Lab investigations will use laboratory, field study, and special readings. Four hours lecture and one 3-hour laboratory. Recommended prerequisite: Ch 221, 227 or concurrent enrollment in Ch 221, 227.

Bi 299**Special Studies (Credit to be arranged.)****Bi 301, 302, 303****Human Anatomy and Physiology (4, 4, 4)**

Fundamental principles of microanatomy, macroanatomy, genetics, embryology, and physiology, as applied to the human organism will be presented and correlated to provide a comprehensive understanding of man as a functionally integrated biological entity. One 3-hour laboratory period. A previous course in chemistry is recommended. Recommended prerequisite: one year of college biological science.

Bi 326*Comparative Vertebrate Embryology (5)**

Comparative study of the development of representative vertebrates, including the cellular mechanisms responsible for early morphogenesis. One 4-hour laboratory period. Recommended prerequisite: one year of introductory biology.

Bi 328*Comparative Vertebrate Anatomy (5)**

Gross dissection and comparison of organ systems in representative vertebrate forms. Two 4-hour laboratory periods. Recommended prerequisite: Bi 252.

***Bi 330 Introduction to Plant Biology (4)**

Plant diversity, structure and function in relationship to evolution, habitat, and interactions with other organisms. Historical impacts of plants on human culture, including conservation, biotechnology, and world food supply. Recommended prerequisites: Bi 251, 252, 253.

Bi 332, 333*Plant Morphology (4, 4)**

Study of the structure and life history of representatives of the algae, fungi, and bryophytes (Bi 332) and the vascular cryptogams (Bi 333). Two 3-hour laboratory periods. Recommended prerequisite: Bi 253.

Bi 336**Cell Biology (5)**

An introduction to the biology of eukaryotic (plant/animal) and prokaryotic cells (bacteria, etc.) with emphasis on physiology, biochemistry, morphology, and energetics. Four hours of lecture and one hour of recitation. Recommended prerequisites: one year of introductory biology and one year of introductory chemistry.

Bi 337**Cell Biology Laboratory (2)**

Experiments in cell biology to complement lecture. One three-hour laboratory. Recommended prerequisite: prior completion of/or concurrent enrollment in Bi 336.

Bi 338**Introduction to Molecular Biology (4)**

The principles, concepts and methods of molecular biology with focus on structure, biochemistry, biosynthesis, and regulation of cellular macromolecules-DNA, RNA, and proteins. Topics covered include the nature and structure of the genes, regulation and expression of genes, molecular aspects and regulation of translation, DNA replication and repair, mutagenesis, cell signaling, the cell cycle and an introduction to the molecular basis of cancer. Recommended prerequisites: Bi 341 and 336.

Bi 341**Introduction to Genetics (4)**

A study of the mechanism of biological inheritance. One 2-hour recitation period. Recommended prerequisite: one year of biological science.

Bi 343**Genes and Society (4)**

Explores the principles of genetics, molecular biology, and biotechnology within social and historical context. Emphasis on the ethical issues arising from the intersection of genetics, technology, and society, with attention to the role of gender, race, and class in the formation and application of scientific knowledge.

Bi 357**General Ecology (4)**

The study of the interrelationships of plants and animals with their environment. Emphasis is on basic ecological principles and concepts, not on current environmental problems. Recommended prerequisite: one year of biological science.

Bi 360*Introduction to Marine Biology (3)**

Introduction to the marine environment and its life forms. Survey of organismal diversity with emphasis on structural and physiological adaptations to the marine realm. Recommended prerequisite: one year of biological science.

Bi 361*Introduction to Marine Biology Laboratory (1)**

Laboratory and field work in marine biology. One 3-hour laboratory period. Recommended prerequisite: completion of or concurrent enrollment in Bi 360.

Bi 370*Mushrooms (4)**

An introduction to the distribution, systematics, identification, ecology, morphology, and life histories of visible fungi (mushrooms). Two 3-hour laboratory periods; field trips. Recommended prerequisite: one year of biology.

Bi 387**Vertebrate Zoology (6)**

Introduction to the classification, anatomical characteristics, distribution, and life habits of fishes, amphibians, reptiles, birds, and mammals. Two 2-hour lectures, two 2-hour laboratories. Recommended prerequisite: one year of college-level biology or zoology.

Bi 399**Special Studies (Credit to be arranged.)****Bi 401/501****Research (Credit to be arranged.)****Bi 404/504****Cooperative Education/internship (Credit to be arranged.)****Bi 405/505****Reading and Conference (Credit to be arranged.) Pass/no pass only.****Bi 406****Laboratory Project (Credit to be arranged.)****Bi 407/507****Seminar (Credit to be arranged.)**

Selected topics in biology.

Bi 410/510**Selected Topics (Credit to be arranged.)**

Consent of instructor.

Bi 412/512*Animal Behavior (4)**

An evolutionary approach to the study of animal behavior. The importance of ecological, physiological, and social variables will be examined in relation to the behavior of the individual animal. Recommended prerequisites: one year of introductory biology and upper-division standing.

Bi 413/513*Herpetology (6)**

Study of the distinguishing features, anatomy, physiology, origins, evolution, and ecology of amphibians and reptiles. North American species are emphasized. Two 2-hour lectures, two 2-hour laboratories. Recommended prerequisite: Bi 387.

Bi 414/514**Ornithology (6)**

Study of the evolution, diversity, ecology, physiology, and behavior of birds. Two 2-hour lectures and one 3-hour laboratory. The laboratory emphasizes species identification and exposes students to techniques used in museum and field studies. Students are required to conduct a research project outside of scheduled laboratory time. Recommended prerequisite: Bi 387.

Bi 415/515**Mammalogy (6)**

Study of the diversity, characteristics, evolution, structure, function, distribution, and life habits of mammals. North American Species are emphasized. Two 2-hour lectures, two 2-hour laboratories. Recommended prerequisite: Bi 387.

Bi 416/516*Marine Mammals (6)**

Study of the distinguishing features, classification, origins, evolution, physiology, anatomy, behavior, ecology, and status of groups of marine mammals. Two 2-hour lectures, one 3-hour laboratory. Recommended prerequisite: Bi 387.

Bi 417/517*Mammalian Physiology (4)**

Physiology of the mammalian cardiovascular, respiratory, renal and digestive systems with emphasis on homeostatic control and integra-

tion of these systems in normal and pathophysiological states. Recommended prerequisite: upper-division physiology course.

Bi 418/518

Comparative Animal Physiology (4)

Physiology of metabolic, respiratory, circulatory, excretory, muscle, and nervous systems with emphasis on a comparative ecological approach. Recommended prerequisite: upper-division physiology course.

Bi 419/519

Animal Physiology Laboratory (4)

Laboratory experiments on the physiology of animals from the cell through organismic levels. Two 3.5-hour laboratory periods. Recommended prerequisite: Bi 336, 417 or 418. May be concurrent.

Bi 421/521

Virology (4)

A study of the classification, structure, genetics, molecular biology of replication, cell interactions, and host response of representative groups of bacterial, plant, and animal viruses, and the medical aspects of important human viruses. Recommended prerequisite: Bi 338.

***Bi 422/522**

Comparative Vertebrate Endocrinology (4)

Neuroendocrine and endocrine mechanisms in vertebrates with an emphasis on the comparative physiology and morphology of endocrine systems. Recommended prerequisites: Ch 336, Bi 253.

Bi 423/523

Microbial Ecology (4)

Study of the interaction of microorganisms with each other and plants and animals; soil and aquatic systems; microbial evolution; cycles of matter; biodegradation and microbial pest control. Recommended prerequisite: Bi 480.

Bi 424/524

Molecular Genetics (4)

The nature of the gene and its mode of action, organization of the genetic material, and the regulation of gene action. Recommended prerequisite: Bi 338.

Bi 426/526

Evolution (4)

Examination of micro- and macroevolutionary patterns in the evolution of life, with an emphasis on the mechanisms of evolution. One 2-hour recitation period. Recommended prerequisite: Bi 341.

***Bi 427/527**

Evolutionary Genetics (4)

An introduction to population genetics theory and an examination of the genetic techniques that are used to look at populations, speciation, and phylogenetic relationships. Recommended prerequisite: Bi 341, Bi 426.

***Bi 428/528**

Human Genetics (4)

The organization of the human genome, pedigree analysis, gene mapping, chromosome abnormalities, sex determination, and gene defects (metabolic and hemoglobin). Topics are discussed from the point of view of clinical applications and current research. Recommended prerequisite: Bi 341.

Bi 429/529

Conservation Biology (4)

Examination of the principles of conservation biology and applications of theory to conservation issues, globally and in the Northwest. Recommended prerequisites: Bi 341, 357, 426; Bi 387.

Bi 430/530

Theory of Recombinant DNA Techniques (3)

Lectures on the principles and theory of recombinant DNA and molecular cloning techniques. Topics will cover use of restriction and other DNA modifying enzymes, host-vector systems, DNA fragment and plasmid isolation techniques, gene mapping, subcloning techniques, in vitro mutagenesis, cDNA and genomic cloning, screening of clones, blot hybridizations, DNA transfection and use of reporter genes, DNA sequencing and PCR. Recommended prerequisite: Bi 338.

Bi 431/531

Recombinant DNA Techniques Laboratory (2)

Laboratory of recombinant DNA and molecular cloning techniques. Corequisite: Bi 430/530.

***Bi 432/532**

Morphology of Nonvascular Plants and Fungi (4)

Study of the morphology, structure, and life history of algae, bryophytes, and fungi from an evolutionary point of view. One 3-hour laboratory. Recommended prerequisite: Bi 253.

***Bi 433/533**

Morphology of Vascular Plants (4)

Study of the gross morphology, development, and structure of roots, stems, leaves, and flowers from an evolutionary point of view. One 3-hour laboratory. Recommended prerequisite: Bi 253.

***Bi 434/534**

Plant Anatomy (5)

Study of the structure of meristems, cells, tissues, and tissue systems of roots, stems, leaves, flowers, and fruits from the developmental and comparative standpoint. One 3-hour laboratory. Recommended prerequisite: Bi 253.

Bi 435/535

Plant Systematics (4)

Study of angiosperm classification, diversity, and evolutionary relationships. Methods of phylogenetic analysis and current hypotheses regarding angiosperm phylogeny are emphasized. Lab will focus on the form and floral structure of about 30 local plant families. One 3-hour laboratory. Recommended prerequisite: Bi 252.

Bi 441/541

Plant Physiology (5)

An introduction to the metabolic activities of plants. Two 3-hour laboratory periods. Recommended prerequisite: Bi 336 or one term of biochemistry.

***Bi 442/542**

Plant Physiology (3)

Biochemical activities of plants, photosynthesis, and respiration. Course is intended to be taken in sequence with Bi 441. Recommended prerequisite: Bi 441.

Bi 450/550

Phylogenetic Biology (4)

Study of the history of life's diversification through the use of phylogenetic trees, with a focus on how genes, organisms, and traits have

evolved. Includes hands-on computer analyses of DNA sequences. Recommended prerequisites: Bi 424, 426.

***Bi 451/551, 452/552**

Parasitology (4, 4)

Study of the biological inter-relationships of parasites and their hosts. An introduction to the morphology, physiology, and life cycle of representative parasites. One 3-hour laboratory period. Recommended prerequisite: two years of biology.

***Bi 453/553**

Biology of Aging (3)

The study of molecular and structural changes in animals as a function of age. Emphasis is on the basic biological factors which limit lifespan. Recommended prerequisites: Bi 336 or biochemistry, Bi 487.

Bi 455/555

Histology (6)

Systemic study, description, and identification of histological structures. Two 3-hour laboratory periods. Recommended prerequisite: two years of biology.

Bi 456/556

Developmental Biology (4)

Explores basic principles of how organisms develop from a fertilized egg into a complex, multicellular adult. Focuses on contemporary issues in developmental biology, including pattern formation, morphogenesis, determination, and differentiation in vertebrates and invertebrates. Recommended prerequisite: Bi 341.

***Bi 461/561**

Freshwater Invertebrate Zoology (5)

A survey of the major groups of freshwater invertebrates with emphasis on benthic invertebrates and invertebrate groups used as biological indicators. Two 3-hour laboratories; field work outside of class hours. Recommended prerequisites: Bi 251, 252, 253.

Bi 462/562

Neurophysiology (4)

Lectures covering the basic anatomy of the vertebrate central nervous system (CNS) and the cellular bases for resting, graded and action potentials. Also, chemical and electrical signaling between cells of the nervous system is discussed, including pharmacological intervention in the CNS. Lastly, several model systems for integrative neuroscience are described including the visual and somatosensory systems, learning, memory, and simple motor pattern generators. Recommended prerequisite: Bi 336.

Bi 463/563

Sensory Physiology (4)

An exploration of the range of animal senses with lecture and discussion of the principles of sensation and sensory communication in general, and the detailed physiology of transduction for mechanical, electromagnetic, chemical, nociceptive, and thermal senses. Recommended prerequisite: Bi 462/562.

***Bi 471/571**

Plant Ecology (4)

A study of the interrelationships between plants and their environment with emphasis upon individual adaptation and community dynamics. One 3-hour laboratory period. Recommended prerequisite: Bi 357 or equivalent.

Bi 472/572*Natural History (3)**

A study of plant and animal interrelationships, emphasizing maintenance of proper field records, identification, distribution, and ecology of vertebrates in Oregon. Includes one two-hour laboratory. Recommended prerequisite: one year of biology.

Bi 473/573**Field Sampling (4)**

An introduction to the methods commonly employed for collecting and interpreting ecological data. One 3-hour laboratory. Recommended prerequisite: Bi 357.

Bi 476/576*Population Biology (4)**

A study of classical and modern theories of the growth and regulation of natural populations of plants and animals. Emphasis will be placed on quantitative models. Topics will include: age-specific population growth; population growth in a limited environment; competitive and predator-prey interactions; biotic diversity; data collection and mathematical modeling of actual populations. Includes one-hour recitation. Recommended prerequisite: Bi 357.

Bi 480/580**Microbiology (4)**

Fundamental concepts and techniques of microbiology. The general principles of microbial cell structure and function, physiology and biochemistry, growth, survival, classification, and diversity are emphasized. Recommended prerequisites: Bi 336 and Bi 338. Corequisite: Bi 488/588.

Bi 481/581*Microbial Physiology (3)**

Physiology and biochemistry of microorganisms. Modern contributions to microbiology emphasized. Micro- and macro-molecular anatomy of microbial cells; energy metabolism, biosynthetic pathways and their regulation, kinetic and molecular aspects of growth, genetics, evolution, and ecology. Recommended prerequisites: Bi 480, 488, and either Bi 336 or one term of biochemistry.

Bi 486/586*Pathogenic Bacteriology (4)**

Study of bacteria pathogenic to humans and their relationship to infectious disease. Emphasis on the biochemical mechanism of infection and laboratory diagnosis. Recommended prerequisite: Bi 480.

Bi 487/587**Immunology and Serology (4)**

The study of resistance to infectious disease and the properties and behavior of antisera formed within an animal in response to foreign antigenic substances. Recommended prerequisite: Bi 480.

Bi 488/588**Microbiology Laboratory (2)**

Techniques in microbiology, including staining and microscopy, isolation and maintenance of bacteria, counting techniques, and methods for a wide range of physiological and morphological tests. Corequisite: Bi 480/580.

Bi 489/589**Microbiology Physiology Laboratory (1)**

Application of the principles of microbiology in the laboratory. One 3-hour laboratory period. Recommended prerequisite: concurrent with Bi 481/581.

Bi 503**Thesis (Credit to be arranged.)*****Bi 543****Advances in Plant Physiology (3)**

Lectures and discussions on selected topics in plant physiology; evaluation of current trends in this field. Recommended prerequisite: Bi 442 (or concurrently). May be repeated once for credit.

Bi 585*Advances in Microbiology (3)**

Analysis of new developments in microbiology including metabolic pathways, anaerobic systems, mechanisms of pathogenicity, and the exploitation of microorganisms to generate products for mankind. Recommended prerequisite: Bi 480.

Bi 590*Advanced Comparative Physiology (4)**

Advanced topics and current research on various aspects of comparative physiology. Recommended prerequisites: Bi 417 or Bi 418 and Bi 419.

Bi 591*Advances in Phycology (2)**

Lectures, seminars, discussions. Recent advances in phycology with an emphasis on cultivation, morphology, physiology, genetics, and sexuality of algae. Recommended prerequisite: Bi 445.

Bi 592*Advanced Topics in Marine Mammals (2)**

A study of one or more advanced topics in marine mammals; covering new developments in regard to their evolution, physiological and anatomical adaptations, echolocation, population structure and dynamics, and behavior. Recommended prerequisite: Bi 416.

Bi 593*Cytogenetics (3)**

Structure and function of chromosomes, mitosis and meiosis, the major chromosomal changes of plant and animal evolution. Recommended prerequisite: Bi 341 or equivalent.

Bi 594*Cytogenetics Laboratory (1)**

Normal and aberrant forms of nuclear division; major techniques in preparation of chromosomes for microscopic examination. One 2-hour laboratory. Recommended prerequisite: current enrollment in Bi 593.

Bi 595*Advanced Topics in Genetics (2)**

New developments in genetics. Topics to include current research in the areas of genetics, human genetics, evolutionary genetics, and molecular genetics. Recommended prerequisite: Bi 341.

Bi 596*Advanced Topics in Evolution (2)**

New developments in evolution. A study of one or more advanced topics relating to the patterns and processes of microevolution and macroevolution. Recommended prerequisite: Bi 426.

Bi 597*Advanced Topics in Mammalogy (3)**

Study of one or more advanced topics in mammalogy.

Bi 598**Graduate Research Prospectus (3)**

Each student develops and presents a thesis prospectus. The prospectus is to include a review of the literature and a detailed statement of significance, specific aims, research design, and methods. All entering biology graduate students (M.S.T., M.A./M.S. and Ph.D.) are required to take this course.

Bi 599**Graduate Grant Writing (3)**

Each student is required to write a major grant proposal based on their research prospectus. All biology graduate students (M.S.T., M.A./M.S. and Ph.D.) are required to take this course. Recommended prerequisite: Bi 598.

Bi 601**Research (Credit to be arranged.)****Bi 603****Thesis (Credit to be arranged.)****Bi 604****Cooperative Education/Internship (Credit to be arranged.)****Bi 605****Reading and Conference (Credit to be arranged.)**

Pass/no pass only.

Bi 607**Seminar (Credit to be arranged.)****Bi 610****Selected Topics (Credit to be arranged.)**

Black Studies

308 Neuberger Hall
503-725-3472
www.blackstudies.pdx.edu

**B.A., B.S.
Minor
Postbaccalaureate Certificate**

The Department of Black Studies is an academic interdisciplinary unit within the College of Liberal Arts and Sciences. The primary focus is in the social sciences and liberal arts. The Department of Black Studies is devoted to the exploration and analysis of the history, politics, and culture of African people in the United States, the Caribbean, and Africa. It seeks to objectively explore the black experience, to illuminate the contributions of African people to world culture, and to provide an alternative to traditional approaches to the study of world history that have bypassed the African experience.

The objectives of the Department of Black Studies include providing comprehensive learning programs aimed at greater understanding by all people of the black experience, past, present, and future.

The Department of Black Studies seeks to expose students from all cultural, religious, and ethnic backgrounds to academic experiences beyond those generally found in traditional college curricula.

The program will provide students with a general historical background of the black experience in Africa and the Western hemisphere, as well as provide detailed examination of cross-cultural and multi-ethnic dynamics in the contemporary social-political context.

In addition, this program will enhance the students ability to function in current job markets that serve multi-cultural and multi-ethnic populations, particularly where the black experience is crucial. It will also give students a competitive advantage in obtaining careers in those areas and within communities that interact with African, African American, and Caribbean cultures.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Program requirements

Requirement for major. In addition to meeting the general University degree requirements for completing a B.A. or B.S., candidates enrolled in the Black Studies major must meet the 60-credit minimum. Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling the major requirements in the area of specialization. At least 30 of the total 60 credits required for the major or 45 of the total credits presented for graduation must be taken in residence at Portland State University. A minimum 2.50 GPA is required in courses taken for the major.

	Credits
Core courses	
BSt 202 Introduction to Black Studies.....	4
BSt 396 Research Methods and Theory in Black Studies.....	4
BSt 407 Senior Seminar	4
BSt 409 Practicum	4
Specialization area themes (one of the following courses).....	4
BSt 203 Introduction to African American History (4)	
BSt 204 Introduction to African American History (4)	
BSt 206 Introduction to Caribbean Studies (4)	
BSt 211 Introduction to African Studies (4)	
Foundation courses (three of four required)	12
BSt 207 Introduction to Race, Class, and Gender (4)	
BSt 214 Introduction to Race Relations (4)	
BSt 221 Introduction to African American Literature (4)	
BSt 261 The African American Economic Experience (4)	
Area of specialization (four courses from an area)	16
Group A: African	
BSt 305 African History Before 1800's (4)	
BSt 306 African History Since 1800's-Present (4)	
BSt 319 Traditional Cultures of Africa (4)	
BSt 362 African Prehistory (4)	
BSt 406 African Studies Overseas Experience (4)	
BSt 413 Slavery (4)	
BSt 422 African Fiction (4)	
BSt 423 African Fiction (4)	
BSt 450 Topics in African/Caribbean History and Culture (4)	
BSt 467 African Development Issues (4)	
BSt 470 African Art (4)	
BSt 471 Understanding International Experience (4)	
Group B: African American	
BSt 302 African American Experience in the 20th Century (4)	
BSt 342 Black Feminism/Womanism (4)	
BSt 351 African American Literature (4)	
BSt 352 African American Literature (4)	
BSt 410 Psychological Development of African American Children (4)	
BSt 411 African American History Seminar (4)	
BSt 412 Oregon African American History (4)	

BSt 413 Slavery (4)
BSt 414 Racism (4)
BSt 416 African American Urban Education Problems (4)
BSt 417 The African American Family (4)
BSt 419 African American Women in America (4)
BSt 421 African American Writers (4)
BSt 424 African American/African Culture in Cinema (4)
BSt 425 Black Cinema: The 1970's (4)
BSt 426 Contemporary African American Cinema (4)
BSt 427 African American Film and Film Makers (4)
BSt 430 African American Political Thought (4)
BSt 464 Minority Business Perspectives (4)
BSt 484 African American Community Development (4)

Group C: Caribbean

BSt 406 Caribbean Overseas Experience (4)	
BSt 413 Slavery (4)	
BSt 420 Caribbean Literature (4)	
BSt 440 Caribbean Studies (4)	
BSt 450 Topics in African/Caribbean History and Culture (4)	
BSt 471 Understanding International Experience (4)	
Sub-total	48

Elective Courses

(Adviser-approved credits in other disciplines. May also include upper-division Black Studies courses outside area of specialization)

Fr 435 Francophone Literature 20th Century (4)	
Geog 363 Geography of Africa (4)	
Mus 374 World Music (Africa) (4)	
Soc 337 Minorities (4)	
WS 330 Women of Color in the United States (4)	
Intl 471 Understanding International Experience (4)	
Ling 471 Understanding International Experience (4)	
Sub-total	12
Total	60

Requirements for minor. To earn a minor in black studies a student must complete 28 credits (12 credits of which must be taken in residence at PSU), to include the following:

	Credits
Two courses chosen from:	8
BSt 203, 204 Introduction to African-American History	
BSt 206 Introduction to Caribbean Studies	
BSt 211 Introduction to African Studies	
BSt 221 Introduction to African American Literature	
Three courses chosen from	12
BSt 302 African American Experience in the 20th Century	
BSt 305 African History, Before 1800	
BSt 306 African History, 1800-Present	
BSt 362 African Prehistory	
BSt 412 Oregon African American History	
BSt 413 Slavery	
BSt 414 Racism	
BSt 417 African American Family	
BSt 419 African American Women in America	
BSt 421 African American Writers	
BSt 424 African American/African Culture in Cinema	
BSt 430 African American Political Thought	

BS1 440 Caribbean Studies
 BS1 470 African Art
 BS1 484 African American Community
 Development

Eight adviser-approved credits chosen from related courses within departments in the College of Liberal Arts and Sciences.....8

Total credits for minor 28

Requirements for certificate. A B.A. or B.S. is a prerequisite for a certificate in black studies. Candidates for the black studies certificate must satisfy the requirements outlined below. Completion of 36 credits is required for the certification in black studies. It is recommended that of these 36 credits, 24 credits be Department of Black Studies course offerings. Twenty-four credits will be upper-division courses within an area of specialization constructed with the consent of the adviser and approval of faculty.

1. Completion of 12 credits of lower-division courses with consent of adviser and approval of faculty. These 12 credits must relate to black studies areas of specialization listed below.

2. Completion of 24 credits of upper-division courses in an area of specialization within a program constructed with consent of adviser and approval of faculty. Areas of specialization include:

- ◆ Black culture and civilization (history, art, music, literature, etc.)
- ◆ Black social development (sociology, political science, psychology, etc.)

All courses used to satisfy certificate requirements need not be black studies courses, but can include appropriate courses in other departments as approved by an adviser. Students may focus on the American, Caribbean, or African experiences.

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling certificate requirements.

Languages. There are no special language requirements for a Black Studies certificate. However, students interested in travel to Africa, the Caribbean, or South America are encouraged to acquire skills in African languages, French, Spanish, or Portuguese.

Center for Black Studies

308 Neuberger Hall
 503-725-3472

Established in 1969, the Center for Black Studies at Portland State University facilitates the study of the past and present experiences of black America.

Among the goals of the center is to act as a forum between faculty members and students of different disciplines who share an interest in black studies; to collect and

disseminate information which accurately reflects and helps improve the black experience; and to link the University and black communities by maintaining an active role in community service.

The center provides the University and the broader community with cultural activities and the stimulation of an exciting and enlightening intellectual atmosphere in the Portland community, contributing to greater understanding and cooperation between races. A lecture series brings to the campus and the Portland community black speakers of different disciplines and philosophies who have made notable contributions to society. The center promotes national and international activities in this area through the generation of grants, proposals, and programs that combine University staff, money, and expertise with resources from the government and the private sector.

Courses

Courses with an asterisk () are not offered every year.*

**BS1 199
 Special Studies (Credit to be arranged.)**

**BS1 202
 Introduction to Black Studies (4)**
 Historical and theoretical underpinnings of black studies as an inter- and multidisciplinary field in the arts and humanities. Introduced through exemplary scholarship in African, African American and Caribbean studies. What makes a specialization unique within the academy and its applicability to other disciplines.

**BS1 203, 204
 Introduction to African
 American History (4, 4)**

An introductory sequence designed to provide students with a factual framework and conceptual foundation to analyze the history of the black race in the New World. Primarily a lecture-discussion format augmented with speakers and films, the course will trace the pertinent contacts between the African and European worlds from ancient times to the present. Special consideration will be given to developing the student's skill to re-examine traditional historical concepts and information from the perspective of the black experience.

**BS1 206
 Introduction to Caribbean Studies (4)**

Interdisciplinary examination of the historical and cultural experience of the circum-Caribbean regions. Special attention will be given to issues in the creation of multicultural society, such as the dynamics of resistance and the interplay of cultural identity and political domination.

**BS1 207
 Introduction to Race, Class, and Gender (4)**

Provides theoretical foundation to examine the origins of the categories "race," "gender," and "class" as used in African diasporic societies. Analyzes social, political, economic, and cultural phenomenon as they are influenced by con-

structed categories. Focus on how the intersections of identities function at the individual, societal, and structural levels.

**BS1 211
 Introduction to African Studies (4)**

An introductory course designed to provide students with an understanding of methods and sources used by the historian of the African past. Museum visits, guest speakers, and films will supplement the lecture format. In addition to a survey of major themes and issues in the history of the African continent, the course will consider the rise of complex societies, indigenous African towns, agricultural and technological achievements, African state systems, and the impact of international trade and Islam on Africa.

**BS1 214
 Introduction to Contemporary Race and
 Ethnic Relations (4)**

Introductory examination of the origins and manifestations of the socio-historical concept of race. Critical theory approach is used to analyze the manner in which race has been interpreted and its influence on the socio-political relations between races and ethnic groupings. Particular emphasis on topical race issues in the literature which pertain to categorization, gender, culture, and political economy.

***BS1 221
 Introduction to African
 American Literature (4)**

An overview of African American fiction, poetry, drama, and expository prose.

***BS1 261
 The African American
 Economic Experience (4)**

The role of African-Americans in the American economic system. Employment, wage differentials, welfare payments, and the ghetto economy are examined.

**BS1 302
 African American Experience
 in the 20th Century (4)**

An upper-division course designed to examine the history of the black experience in the 20th century. Primarily a discussion-reading format augmented with speakers and films. Special consideration will be given to developing in the student the skill to re-examine traditional concepts and approaches to the study of the black experience within the broader context of mainstream developments in American life and history.

**BS1 305
 African History, Before 1800 (4)**

An upper-division course designed to survey the history of the African continent from the period of European exploration to the eve of colonialism. Using a lecture/discussion format, the course will examine the impact of the European presence on African institutions and trade, and the relative importance of the environment, technology, and indigenous social systems on the transformation of African society prior to 1800. This course is the same as Hst 312; course may be taken only once for credit. Prerequisite: BS1 211.

**BS1 306
 African History, 1800-Present (4)**

An upper-division course designed to survey the history of the African continent from 1800 to the present, with emphasis on the colonial peri-

od, independence and post-independence. This course is the same as Hst 313; course may be taken only once for credit. Prerequisite: BSt 211.

BSt 319

Traditional Cultures of Africa (4)

Survey of African cultures. Some of the main features examined include: environment and people, oral traditions, time and seasons, naming and numbering systems, language and communication systems, religious, political and legal institutions, music, dance, and family. Recommended prerequisite: BSt 211 or Sophomore Inquiry.

BSt 342

Black Feminism/Womanism (4)

Examines the historical evolution of black feminist theory. Starts with emancipation or slave narratives and ends with contemporary manifestations of black feminism, such as hip hop feminism; will redefine feminist resistance in the context of race and gender. Analysis of the pluralism within black feminism including black lesbian feminism, womanist theology, and radical black subjectivity. Examines the people and organizations that shaped black feminist thought and the black liberation movements.

***BSt 351, 352**

African American Literature (4, 4)

A study of African American literature from its oral and folk beginnings to the present. Prerequisite: BSt 221 or Eng 256.

BSt 362

African Prehistory (4)

Methods, sources of evidence, and the results of the study of prehistoric cultures of Africa from the earliest traces until the first written records; it includes human origins (physical and cultural evolution), the earliest civilization, peopling of Africa, migrations, earliest settlements, origins of agriculture and metallurgy. Prerequisites: BSt 211, Anth 102.

BSt 396

Research Methodologies in Black Studies (4)

Introduces students to qualitative research methods in the humanities and social sciences. Exploration of research methods including, but not limited to, interviewing, content analysis, archival research, library research, Internet research, and participant-observation. Special attention will be paid to how to conduct research in marginalized communities.

BSt 399

Special Studies (Credit to be arranged.)

BSt 401

Research (Credit to be arranged.)

Consent of instructor.

BSt 404

Cooperative Education/Internship (Credit to be arranged.)

BSt 405

Reading and Conference (Credit to be arranged.)

Consent of instructor.

BSt 406/506

Overseas Experience (4)

Provides community-based learning in an international context through immersion in departmental programs in Africa and/or the Caribbean. The fee-based programs provide students with rich, multicultural environments in which to learn and serve international com-

munities. Students will be asked to apply for admission to the overseas programs focused in the Caribbean and Africa.

BSt 407/507

Seminar (Credit to be arranged.)

Consent of instructor.

BSt 408

Workshop (Credit to be arranged.)

Consent of instructor.

BSt 409

Practicum (Credit to be arranged.)

Consent of instructor.

BSt 410

Selected Topics (Credit to be arranged.)

Consent of instructor.

***BSt 411/511**

African American History Seminar (4)

This course will provide an in-depth analysis of critical topics and issues in African American history. The focus will be topical rather than chronological and the approach will emphasize specific periods, individuals, or relevant developments for a concentrated treatment in a seminar environment.

BSt 412/512

Oregon African American History (4)

An examination of the black experience in Oregon history. The course will include coverage of the slavery controversy in early Oregon development as well as the individual contributions of blacks to the growth of the state. Additional topics will include the black migration of World War II, Vanport flood, and various legislative actions related to black status in Oregon.

***BSt 413/513**

Slavery (4)

An examination of the institution which has played a central role in establishing the status and position of the modern black population in American society, both in physical and psychological terms. The course will attempt to put information and understandings of slavery in the proper and accurate context of an institution which has been a part of the human experience since the ancient world and which has a legacy and implications far beyond the racially associated perceptions usually attached to it. The approach will be through the comparative analysis of the numerous forms the institution of slavery has assumed in human history. Prerequisites: BSt 206, 211, Hst 101, 102.

***BSt 414/514**

Racism (4)

A survey of the pertinent social-psychological literature on individual and cultural forms of racism in America. The rationalizations, processes and machinery of oppression as constructed by white European and American governments which control and exploit the resources of non-white peoples will be examined. Special attention will be paid to the theoretical/social-psychological explanations of black/white differences. Prerequisites: BSt 207, 211, or 214, UnSt 212.

***BSt 416/516**

African American Urban Education Problems (4)

Course examines the education systems in major cities being inherited by African-Americans. The relationship between public and

private education will be studied for impacts on African-Americans. Educational system response to African American enrollment will be discussed. Moreover, pertinent literature, e.g., the Coleman Report, Jensen's thesis, and others will be introduced with respect to their overall effect on the curricula available to the African American child. Topics of concern include community control, citizen involvement, alternative education forms, race relations, faculty-staff responses, modern trends, etc. Prerequisite: junior, senior, or graduate-level standing.

***BSt 417/517**

The African American Family (4)

A review of the present-day life-styles of African American families in the United States. Special attention is placed on cultural variations by class as they relate to the African American family. A careful study of the appropriate social science literature commonly used to describe the African American family will provide more accurate insights. Prerequisite: BSt 207.

***BSt 419**

African American Women in America (4)

Designed to investigate the evolution of the African American woman from slavery to the contemporary period. African American women's agency will be examined in the anti-slavery, suffrage, club, civil rights, nationalist, black feminist, and current movements for social justice. Prerequisite: BSt 207.

***BSt 420/520**

Caribbean Literature (4)

A selection of poetry and fiction from the English and French speaking Caribbean (in translation where necessary). Prerequisites: One previous African American literature course and 12 additional literature credits.

***BSt 421/521**

African American Writers (4)

A concentrated examination of significant African American literary figures and their impact on American arts and letters. The course will identify each term a particular author or literary period of writing and then read, analyze, and discuss the major works and the background information of that period. Special consideration will be given to the relationships between the topic of focus and the larger spheres of American and world writing. Prerequisites: BSt 221; Eng 107, 108, 253, 254.

***BSt 422/522, 423/523**

African Fiction (4, 4)

Readings in African fiction in regional, cultural, generational, and gender contexts. Prerequisites: One previous African American literature course and 12 additional literature credits.

BSt 424/524

African American/African Culture in Cinema (4)

An examination of the treatment accorded black culture and individuals in the evolution of the cinema industry. Coverage will include review and analysis of classic film productions from the infancy of Hollywood through to the black urban films of the modern period. Emphasis will focus on the relationships between racial stereotypes and the creation of majority culture perceptions of the black experience. Prerequisite: upper-division standing.

BSSt 425/525**Black Cinema: the 1970s (4)**

Examination of the treatment of Black themes, issues and characterization during the decade of the 1970s in the cinema industry. Particular attention will be focused on the genre of the blaxploitation film as an industry response to the rapidly shifting social and racial dynamics of American culture as the Civil Rights era wound down. Prerequisite: upper-division standing.

BSSt 426/526**Contemporary African American Cinema (4)**

Examination of the treatment of Black themes, issues, and characterization in the contemporary cinema industry. Particular attention will be focused on the development of new Black actors, directors, and producers. The impact of these new factors in the industry will be analyzed for the influence they have on the traditions of cinema history relative to the Black experience. Prerequisite: upper-division standing.

BSSt 427/527**African American Films and Film Makers (4)**

Examination of films made by African-Americans from the early years of cinema history down through contemporary films. Examination will include a focus on the internal structure and content of the films as well as consideration of the larger social, cultural, economic, and political context of the society in which the films were produced.

BSSt 430/530*African American Political Thought (4)**

An examination in-depth of the political theory of African American leaders in America between 1850-1920 and the impact of that thought on American political thought. Prerequisite: consent of instructor.

BSSt 440/540**Caribbean Studies (4)**

Interdisciplinary examination of historical or cultural issues in the Caribbean experience. Emphasis will be on issues and dilemmas related to the creation of a multicultural society. Prerequisite: BSSt 211 or 206.

BSSt 450/550**Topics in African/Caribbean History And Culture (4)**

In-depth exploration of selected topics in African and/or Caribbean cultural history. Special attention will be given to thematic issues of broad application to the understanding of cultural interaction, continuity, and change.

BSSt 464*Minority Business Perspectives (4)**

This course is designed to prepare the student for a role as a proprietor of an enterprise, as an administrator in a related public or social agency or to conduct research in an economic area which has very special problems and constraints for the minority entrepreneur or professional. The traditional elements of small business operation will be examined within the framework of reference, progressing from basic organization and feasibility studies through marketing, governmental contracting, contract compliance, and special governmental assistance to minorities.

BSSt 467/567*African Development Issues (4)**

An examination of the causes of poverty and underdevelopment of the African continent. A comparative analysis of pre-colonial, colonial and post-colonial circumstances will be conducted. Prerequisites: BSSt 211.

BSSt 470/570**African Art (4)**

Examination of selected African art forms, styles, and traditions. Emphasis on the context of the art and artist, and their relationship to politics and society in African history. Prerequisites: ArH 204, 205, 206, BSSt 211. This course is the same as ArH 470/570; course may be taken only once for credit.

BSSt 471**Understanding the International Experience (4)**

Examination of communication-based dimensions of an international or intercultural experience, including teaching English to speakers of other languages. Development of strategies and activities required to meet the challenges of teaching, working, or doing research in an international/intercultural setting. Prerequisite: upper-division or postbac academic standing. All linguistics students must register for Ling 471/571 which includes a zero-credit lab, however, this course is also offered as Intl 471. Course may only be taken once for credit.

BSSt 484/584*African American Community Development (4)**

Designed to investigate processes of community development for their application to urban African American communities. Topics include community development, community organization, ghettos as colonies, citizen participation, roles of change agents, social planning, and social change implications. Prerequisite: consent of instructor.

Chemistry

262 Science Building II

503-725-3811

www.chem.pdx.edu/

B.A., B.S.

Minor

Secondary Education Program

M.A., M.S., M.A.T. and M.S.T.

(Science/Chemistry)

Ph.D.—Environmental Sciences and

Resources: Chemistry

Undergraduate programs

Chemistry is the study of the reactions of atoms and molecules, the stuff from which people and their physical environment are made. With a relatively small knowledge of atoms and molecules, it is possible to

have a considerable understanding of many chemical phenomena we see and use. A comprehensive knowledge of chemistry is essential for the person who wishes to help solve the problems of today—problems of illness and disease, problems of wise use of our resources—and for the person who wants to do basic research in chemistry or who wants to work in the chemical industry.

The Department of Chemistry is committed to maintaining a teaching program of excellence at the undergraduate level as well as having a strong graduate program. Courses tailored for the student desiring only an introduction to the field are offered on a regular basis. A wide variety of other courses in the program are designed to offer fundamental training for

students majoring in chemistry or for students in other science areas, such as biology or health-related occupations.

The curriculum, faculty, library, and facilities of the department are approved by the American Chemical Society. Graduating chemistry majors are eligible for certification to become members of the ACS after two years of professional experience.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. A student majoring in chemistry is required to take a minimum of 70 credits in the subject and will take courses in the core areas of general chemistry, analytical chemistry, organic chemistry, physical chemistry, inorganic chemistry, and biochemistry. For transfer students, a minimum of 20 credits in upper-division chemistry courses must be earned at PSU.

In addition to meeting the general University degree requirements, the major in chemistry must meet the following departmental requirements:

Option I: Chemistry	Credits
Ch 221, 222, 223 General Chemistry.....	12
Ch 227, 228, 229 General Chemistry Laboratory.....	3
Ch 320, 321 Quantitative Analysis.....	6
Ch 334, 335, 336, 337, 339 Organic Chemistry.....	17
Ch 426, 427 Instrumental Analysis.....	6
Ch 436, 437 Spectrometric Analysis or Ch 411 Chemical Bonding or Ch 412 Advanced Inorganic Chemistry.....	4
Ch 440, 441, 442, 443, 444, 445 Physical Chemistry.....	16
Approved 400-level chemistry courses [†]	6
Total in chemistry	70
One year of physics with calculus with laboratory.....	15
Calculus through Mth 254 or equivalent.....	20
Total in other fields	35

Option II: Biochemistry	Credits
Ch 221, 222, 223 General Chemistry.....	12
Ch 227, 228, 229 General Chemistry Laboratory.....	3
Ch 320, 321 Quantitative Analysis.....	6
Ch 334, 335, 336, 337, 339 Organic Chemistry.....	17
Ch 416, 417 Physical Chemistry for the Biosciences.....	8
Ch 426, 427 Instrumental Analysis.....	6
Ch 490, 491, 492, 493 General Biochemistry.....	15
Approved 400-level science electives [†]	6
Total in chemistry	73
One year of physics with calculus with laboratory.....	15
Calculus through Mth 253 or equivalent.....	12
Bi 251, 252, 253.....	15
Total in other fields	42

All courses used to satisfy the departmental major requirements, whether taken in the department or elsewhere, including courses from supporting departments (e.g., mathematics, physics, and biology), must be graded C- or above, with a combined GPA of 2.25 or higher, except for those major course requirements offered only on a pass/no pass basis (e.g., General Chemistry Laboratory). If an unsatisfactory grade is received in an upper-division course offered in the Department of Chemistry, a student will be allowed to retake the course to improve their grade only once.

A student will be certified by the American Chemical Society and is eligible to become a member of the society after graduation, if the student is following Option I, and if the 400-level chemistry electives include Ch 411, Ch 490 (or Ch 350), and a lab course

that includes at least 30 clock hours (including Ch 401 and 406).

Requirements for a minor. To earn a minor in chemistry a student must complete the courses outlined below; at least 10 credits of these must be taken in residence at PSU.

	Credits
Ch 221, 222, 223 General Chemistry.....	12
Ch 227, 228, 229 General Chemistry Laboratory.....	3
Ch 320, 321 Quantitative Analysis.....	6
Ch 334, 335, 336, 337, 338 Organic Chemistry or Ch 327, 328, 331, 332 Elements of Organic Chemistry.....	12-16
And one of the following: Ch 416 or 440 Physical Chemistry or Ch 350 or 490 [‡] Biochemistry.....	4
Total	37-42

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling department minor requirements (except for Ch 227-229).

SECONDARY EDUCATION PROGRAM Adviser: G. Shusterman

Students who plan to obtain a teaching license with an endorsement to teach chemistry at the high school level should complete a baccalaureate degree with a major in chemistry (preferred) or in general studies/science. The degree program should include the following courses:

	Credits
Ch 221, 222, 223 General Chemistry.....	12
Ch 227, 228, 229 General Chemistry Laboratory.....	3
Ch 320, 321 Quantitative Analysis.....	6
Ch 334, 335, 336, 337, 338 Organic Chemistry or Ch 327, 328, 331, 332 Elements of Organic Chemistry.....	12-16
Ch 416 or 440 Physical Chemistry or Ch 350 or 490 Biochemistry.....	4
Subtotal	37-41
Ph 201, 202, 203 or 211, 212, 213 General Physics.....	9-12
Ph 204, 205, 206, or 214, 215, 216 Physics Laboratory.....	3
Subtotal	12-15
Chemistry or Physics elective.....	3-4
Total	52-60

Those majoring in general studies/science are advised to strengthen their preparation for teaching by taking additional chemistry and physics courses as their degree programs permit. Consult with the secondary education adviser for suitable courses. Chemistry teachers in many schools also teach physics, so it is recommended that additional physics courses be taken in preparation for eventually adding a physics endorsement to the license.

Courses should be taken for differentiated grades, except those offered only on a pass/no pass basis. A positive departmental recommendation for admission to the fifth-year teacher-education program will depend on at least a C- in all chemistry and physics courses, as well as a combined 2.25 GPA for these courses.

Graduate programs

The Department of Chemistry offers graduate work leading to the following degrees: Master of Arts or Master of Science; Master of Arts in Teaching or Master of Science in Teaching (Science); and Ph.D. in environmental sciences and resources/chemistry.

The M.S. program is designed for the student who wishes to pursue a career as a professional chemist or a scientist in other allied disciplines. The program involves work in advanced courses with training in research techniques. An integral part of the program is the individual research project and thesis.

The M.A. program is designed for the student who wishes to obtain an advanced degree in chemistry, but for whom the time commitment of a traditional research degree (M.S.) is not feasible due to (typically) employment obligations. The M.A. program involves advanced coursework, a literature project, and a seminar presentation.

The M.A.T./M.S.T. is offered to provide scientific training for teachers in secondary schools. The program is composed of courses intended to increase the sophistication of the student in chemical principles and to acquaint the student with current techniques in teaching methods.

The program leading to the Ph.D. in environmental sciences and resources/chemistry combines basic training in a particular chemical discipline with courses and seminars relating to environmental topics. Students complete the program prepared to pursue a career in chemistry or a career more directly related to environmental science or environmental problems. The program is part of the Environmental Sciences and Resources Doctoral Program in the College of Liberal Arts and Sciences. For more information, see page 127.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information. Students should also apply directly to the department. Contact our office or check the Web site, www.chem.pdx.edu for application forms and other information.

[†] May include two credits of graded Ch 401 if taken over two terms.

[‡] Ch 490 requires the Ch 334, 335, 336 Organic Chemistry sequence as a prerequisite.

Degree requirements

University master's degree requirements are listed on page 70; requirements related to the Environmental Sciences and Resources Doctoral Program are given on page 127. Specific departmental requirements are listed below and in the graduate handbook.

Master of Arts or Master of Science. Prior to initial course registration in the M.A./M.S. program, the student must take entrance examinations in those areas of chemistry represented in the student's previous coursework. Any three of these examinations must be passed by the end of the first three academic terms of residence.

The candidate must complete a minimum of 45 credits in approved graduate courses. Of these, 6 credits of coursework must be outside of the major area of interest but within the Department of Chemistry. All students participate in a one-term course entitled Seminar Preparation as well as present to the department one seminar on an acceptable topic. For the M.A., if the student has not successfully completed two academic years of German, Russian, or French at the undergraduate level, the student must show competence by examination.

Each candidate for the M.S. degree in chemistry must complete a thesis. The thesis, an experimental or theoretical research project resulting in an original contribution to chemical knowledge, must be defended in an oral examination. The examination is not restricted to the thesis material alone but may cover any aspect of chemistry or related fields.

Master of Arts in Teaching or Master of Science in Teaching. The College of Liberal Arts and Sciences offers the M.A./M.S.T. degrees in Science/Chemistry. In consultation with the graduate adviser, the student should establish the degree program before the completion of 15 credits of coursework. The program must include a minimum of 45 credits in approved graduate courses, to include a minimum of 24 credits in the area of concentration. At least 9 credits, but no more than 15 credits, must be in education courses. In order to fulfill requirements for the degree, the student must satisfactorily complete the degree program and pass both a final written examination and a final oral examination.

Doctor of Philosophy in environmental sciences and resources. In addition to the program requirements listed on page 127, the candidate must pass entrance examinations as in the M.A./M.S. program and the departmental comprehensive examination. The candidate must satisfy a seminar requirement as in the M.A./M.S. program. Additional requirements are delineated in the graduate handbook.

Courses

All courses in chemistry will be taught with the assumption that the student has successfully completed all recommended prerequisites.

Courses with an asterisk () are not offered every year.*

Students registering for labs must attend the first lab meeting.

†Ch 104, 105, 106

Introductory Chemistry I, II, III (4, 4, 4)
A survey of chemistry for students in nursing, in allied health fields such as dental hygiene, in forestry, and in the liberal arts. This course is not intended for science or engineering majors. Must be taken in sequence. Prerequisite for Ch 104: two years of high school algebra or Mth 95.

†Ch 107, 108, 109

Introductory Chemistry Laboratory I, II, III (1, 1, 1)

Laboratory work to accompany Ch 104, 105, 106 respectively. Concurrent enrollment in the appropriate lecture course is required. Ch 107, 108; one 2-hour laboratory period. Pass/no pass only. Ch 109: one 3-hour laboratory period.

*Ch 160

Physical Science (4)

An integrated survey of fundamental principles of physics and chemistry. The course is designed for students majoring in fields other than chemistry, physics or geology who wish a broad view of the principles of several physical sciences needed. Elementary algebra is used in this course.

*Ch 167

Physical Science Laboratory (1)

Optional lab work to accompany Ch 160. Enrollment in the laboratory requires concurrent or prior enrollment in the lecture. One 2-hour laboratory.

*Ch 170

Fundamentals of Environmental Chemistry (4)

A course designed to increase the scientific knowledge of the non-science major. The interaction between science and society, the nature of matter and chemical reactions. Energy, radiation, and nuclear power.

Ch 199

Special Studies (Credit to be arranged.)

†Ch 221, 222, 223

General Chemistry (4, 4, 4)

Fundamental basis of chemistry for science, engineering and health professional students (such as pre dental, premedical, premedical technology and veterinary students). Concurrent enrollment in Ch 227 for Ch 221, Ch 228 for Ch 222, and Ch 229 for Ch 223 is recommended. Recommended prerequisite for Ch 221: Mth 111 or concurrent enrollment. High school chemistry or equivalent is recommended. Recommended prerequisite for Ch 222: Ch 221; for Ch 223: Ch 222.

†Ch 227, 228, 229

General Chemistry Laboratory (1, 1, 1)

Laboratory work to accompany General Chemistry (Ch 221, 222, 223). Concurrent enrollment in the appropriate lecture course is recommended. One 3-hour laboratory. Pass/no pass only.

Ch 250

Nutrition (4)

Nutritive value of foods from the standpoint of newer scientific investigations; nutritional requirements for normal human beings; selection of an optimal diet for health; present-day problems in nutrition; recent trends in American dietary habits.

Ch 284, 285, 286

General Chemistry

Workshop I, II, III (1, 1, 1)

Optional peer-led problem-solving sessions designed to promote the success of students in Ch 221, 222, 223 general chemistry sequence. Corequisite: corresponding lecture course Ch 221, 222, 223. Pass/no pass only.

Ch 320

Quantitative Analysis (4)

Fundamental principles of quantitative analytical chemistry. Recommended prerequisites: Ch 223 and 229.

Ch 321

Quantitative Analysis Laboratory (2)

Basic quantitative analytical laboratory work including volumetric and instrumental methods. Recommended prerequisites: Ch 320 or concurrent enrollment.

Ch 327, 328

Elements of Organic Chemistry Laboratories I, II (2, 2)

Laboratory work to accompany the sequence of Ch 331, 332. One 4-hour laboratory period. Recommended prerequisites for Ch 328: Ch 327. Concurrent enrollment in Ch 331 or 332 respectively is recommended.

†Ch 331, 332

Elements of Organic Chemistry I, II (4, 4)

Chemistry of the carbon compounds, the aliphatics, aromatics, and derivatives. The corresponding laboratory courses are Ch 327, 328. Recommended prerequisites for Ch 331: Ch 223; concurrent enrollment in Ch 327 is recommended. Recommended prerequisites for Ch 332: Ch 331; concurrent enrollment in Ch 328 is recommended.

†Ch 334, 335, 336

Organic Chemistry I, II, III (4, 4, 4)

A comprehensive study of the chemistry of the compounds of carbon. Meets chemistry and biochemistry major requirements. The corresponding laboratory courses are Ch 337, 339 for chemistry and biochemistry majors, and Ch 337, 338 for non-chemistry majors. Recommended prerequisites: Ch 223. Concurrent enrollment in the laboratory course is recommended.

Ch 337

Organic Chemistry Laboratory I (2)

Part one of the laboratory work to accompany the sequence of Ch 334, 335, 336. One 4-hour laboratory period. Concurrent enrollment in the lecture course is recommended.

Ch 338

Organic Chemistry Laboratory II (nonmajors) (2)

Part two of the laboratory work to accompany the sequence Ch 334, 335, 336. One 4-hour laboratory period. Not open to chemistry majors. Recommended prerequisites: Ch 337. Concurrent enrollment in the lecture course is recommended.

† A maximum of 16 credits will be allowed for first-year chemistry. Students will be allowed credit for only one first-term, one second-term, and one third-term course. First-year chemistry courses are Ch 104, 105, 106; and Ch 221, 222, 223. Cannot be used to satisfy requirements toward either the chemistry minor or major.

‡ Ch 331, 332 duplicate to some extent Ch 334, 335, 336. No more than 12 credits will be allowed in organic chemistry lecture.

**Ch 339
Organic Chemistry Laboratory II
(chem majors) (3)**

Part two of the laboratory work to accompany the sequence Ch 334, 335, 336. More extensive laboratory course than Ch 338; required for chemistry and biochemistry majors. Two 4-hour laboratory periods. Recommended prerequisites: Ch 337. Concurrent enrollment in the lecture course is recommended.

**Ch 350
Biochemistry (4)**

Biochemistry for students having a limited background in physical chemistry. Recommended prerequisites: Ch 229 and 332 or 336.

***Ch 355
Biochemistry of Women (3)**

Structure, synthesis, mode of action, and effects of female sex hormones. Relationships between developmental, mature functional, and menopausal phases of woman's life and hormonal balance. Effect of female hormones upon glucose utilization, fat metabolism, bone metabolism, energy balance, and mental function. Biochemistry of pregnancy and lactation. Prerequisite: one year of college chemistry or biology.

**† Ch 360
Origins of Life on Earth (4)**

Scientific description of the chemical events leading to life on the Earth. Current and past theories of how life arose and experiments that support these ideas will be presented. Cultural and societal issues surrounding the origins of life will also be discussed. Recommended prerequisites: one college-level course in biology, chemistry, geology, or physics.

***Ch 371
Environmental Chemistry (4)**

Current environmental problems. Stratospheric ozone, greenhouse effect, photochemical smog, particulates, acid rain, and trace metals, water resources, pollution, and treatment; oil spills; solid waste disposal; hazardous chemicals. Recommended prerequisites: one term of college chemistry.

***Ch 375
Environmental Chemistry Laboratory (1)**

Optional laboratory work to accompany Environmental Chemistry (Ch 371). Concurrent enrollment in Ch 371 is required. One 2-hour laboratory.

**Ch 384, 385, 386
Organic Chemistry
Workshop I, II, III (1, 1, 1)**

Optional peer-led problem-solving sessions designed to promote the success of students in Ch 334, 335, 336 organic chemistry sequence. Corequisite: corresponding lecture course Ch 334, 335, 336. Pass/no pass only.

**Ch 399 Special Studies
(Credit to be arranged.)**

**Ch 401/501
Research (Credit to be arranged.)**
Consent of instructor and chair of department. Credit will only be awarded after filing in the department office a well-written, detailed report approved by the instructor and the department chair. Ch 501 pass/no pass only.

**Ch 404/504
Cooperative Education/Internship
(Credit to be arranged.)**

**Ch 405/505
Reading and Conference
(Credit to be arranged.)**
Consent of instructor and department chair. Ch 505 pass/no pass only.

**Ch 406
Chemical Preparations
(Credit to be arranged.)**

Methods of synthesis of compounds in the fields of inorganic, organic, or biochemistry. Maximum: 6 credits. Recommended prerequisites: consent of instructor and chair of department.

**Ch 407/507
Seminar (Credit to be arranged.)**

Consent of instructor. Ch 507 pass/no pass only.

**Ch 410/510
Selected Topics (Credit to be arranged.)**

Consent of instructor and chair of department.

**Ch 411/511
Chemical Bonding (4)**

Atomic orbitals, ionic bonding, valence bond theory, molecular orbital theory, crystal field theory, and introduction to coordination theory. Recommended prerequisites: Ch 223, Ph 203, Mth 253, and Ch 417 or Ch 442.

***Ch 412/512
Advanced Inorganic Chemistry (4)**

Ligand field theory, coordination chemistry, transition metals, organometallic chemistry, acids and bases, nonaqueous solvents, and descriptive chemistry of the elements. Recommended prerequisites: Ch 223, Ph 203, Mth 251 and Ch 417 or 442.

**Ch 416/516, 417/517
Physical Chemistry
for the Biosciences I, II (4, 4)**

Intended primarily for students in the biological sciences and allied medical health fields. The emphasis is on the application of modern physical chemistry to problems of biological interest. Ch 416 includes the study of heat, work, energy, entropy, vapor pressure, chemical equilibrium, and transport phenomena. Ch 417 covers chemical and enzyme kinetics, quantum chemistry, photochemistry, and spectroscopy. Courses must be taken in sequence. Recommended prerequisite: Ch 320, 321, a year of general physics with calculus, and two terms of calculus. Recommended prerequisites: Ch 223 and Ch 229.

***Ch 418/518
Advanced Chemistry Laboratory (4)**

Advanced techniques and their use in the preparation of compounds. One lecture; two 3-hour laboratory periods. Recommended prerequisites: Ch 338 or 339.

***Ch 424/524
Electronics and Instrumentation for
Chemists (2)**

Selected topics in chemical instrumentation will be presented at a basic level. Representative topics are current and voltage measurements, voltage dividers, simple filters, introduction to operational amplifiers and digital circuits. Requires concurrent enrollment in Ch 425/525.

Recommended prerequisites: Ch 320, 321, Ph 203, and Ch 416 or 440/540.

***Ch 425/525
Electronics and Instrumentation
Laboratory (3)**

Laboratory work to accompany Ch 424/524. Two 3-hour lab periods. Requires concurrent enrollment in Ch 424/524.

**Ch 426/526
Instrumental Analysis (4)**

Theory and application of modern instrumental methods, including UV-visible, fluorescence, atomic absorption and emission, infrared, nuclear magnetic resonance, and mass spectrometry; potentiometry and voltammetry; gas and liquid chromatography, and capillary electrophoresis.

**Ch 427/527
Instrumental Analysis Laboratory (2)**

Laboratory work to accompany Ch 426/526. One 4-hour laboratory period.

***Ch 430/530, 431/531
Advanced Organic Chemistry (4,4)**
Advanced treatment of general organic reactions and structure; emphasis on bonding, stereochemistry, the correlation of structure and reactivity, scope and mechanisms of organic reactions classified by reaction type. Recommended prerequisites: Ch 336, 442/542, or 417/517.

**Ch 436/536
Spectrometric Analysis (3)**
Ultraviolet, infrared, nuclear magnetic resonance and mass spectrometry in the analysis of molecular structure. Recommended prerequisites: Ch 336 and 339.

**Ch 437/537
Spectrometric Analysis Laboratory (1)**
Use of infrared spectrometers and nuclear magnetic resonance spectrometers. One 3-hour laboratory period. Recommended prerequisites: Ch 436/536 or concurrent enrollment.

***Ch 438/538
Advanced Spectrometric Techniques (3)**
Use of the mass spectrometer in analysis of organic molecules. Discussions of high resolution infrared and nuclear magnetic resonance spectroscopy and their applications to molecular structure. Recommended prerequisites: Ch 436/536 and Ch 437/537. Requires concurrent enrollment in Ch 439/539.

***Ch 439/539
Advanced Spectrometric Laboratory (1)**
Laboratory work to accompany Ch 438/538. One 3-hour laboratory period. Requires concurrent enrollment in Ch 438/538.

**‡ Ch 440/540, 441/541, 442/542
Physical Chemistry (3, 3, 3)**
The study of thermodynamics, phase and chemical equilibria, solutions, electrochemistry, reaction rates and mechanisms, quantum mechanics, spectroscopy, and statistical mechanics. Ch 440/540 requires concurrent enrollment in Ch 443/543. Recommended prerequisites: Ch 320, Ph 213, Mth 254 or concurrent.

**‡ Ch 443/543
Computational Chemistry (3)**
The study of programming methods, statistical analysis of experimental data, and numerical methods of common importance in physical chemistry. Concurrent enrollment in Ch 440/540 recommended.

† Alternate years.

‡ Carries graduate credit only for nonchemistry degrees.

†Ch 444/544, 445/545**Physical Chemistry Laboratory (2, 2)**

Laboratory work to accompany Ch 441/541, 442/542. One 4-hour laboratory period.

Recommended prerequisites: Ch 321 and concurrent enrollment in Ch 441/541, 442/542 respectively.

†Ch 451/551**Materials Chemistry Laboratory (3)**

A suite of laboratory experiments in modern materials chemistry. Topics include nonmolecular inorganic solids (semiconductors, superconductors, sols, and gels), thin polymeric films, magnetic and photonic materials. Equal emphasis is placed on synthesis and physical characterization. Recommended prerequisites: Ch 338 or 339.

†Ch 460/560**Prebiotic Chemistry (4)**

Reaction pathways for the abiological production of molecules involved in biological information flow. Recommended prerequisite: completion or concurrent enrollment in Ch 492/592.

‡Ch 470/570**NMR Spectroscopy (4)**

Nuclear magnetic resonance spectroscopy theory and practice. Basic quantum theory of magnetic moments, the semi-classical vector model of spins, and the product operator formalism will be applied using a variety of NMR spectroscopic techniques. Recommended prerequisite: Ch 417 or 442.

‡Ch 471/571**Biological NMR Spectroscopy (4)**

Nuclear magnetic resonance spectroscopy (NMR) of biological systems. The basic theory of NMR, its application to complex biological molecules and complexes. Recommended prerequisite: Ch 470/570.

Ch 490/590**Biochemistry: Structure and Function (4)**

First term of a three-term course for students preparing for professional biochemical work. Structures of biological molecules and assemblies, including proteins, nucleic acids, and lipids, and how these structures give rise to their biological functions. Recommended prerequisite: Ch 336. Recommended pre- or corequisites: Ch 416 or 440/540, Ch 320/321, and Bi 253.

Ch 491/591**Biochemistry: Enzymology and Metabolism (4)**

Second term of a three-term course for students preparing for professional biochemical work. Basic principles of enzyme catalysis and mechanism, the chemistry and energetics of the primary metabolic pathways responsible for life, including glycolysis/glyconeogenesis, citric acid cycle, lipid and amino acid metabolism, oxidative phosphorylation, and photosynthesis. Recommended prerequisite: Ch 490/590.

Ch 492/592**Biochemistry: Nucleic Acids and Biological Information Flow (4)**

Third term of a three-term course for students preparing for professional biochemical work. Structure and function of nucleotides and nucleic acids. Biochemical detail of DNA replication, RNA transcription, and protein translation. Recommended prerequisites: Ch 490/590 and 491/591.

Ch 493/593**Biochemistry Laboratory (3)**

Introduction to general techniques of biochemistry including purification and characterization of enzymes. One 4-hour laboratory period, plus one hour of lecture. Recommended prerequisite: Ch 491/591 or concurrent enrollment.

Ch 494/594, 495/595*Biochemistry Laboratory (2, 2)**

Advanced laboratory projects carried out on an individual and group basis. Two 3-hour laboratory periods. Recommended prerequisite: Ch 493/593.

Ch 503**Thesis (Credit to be arranged.)**

Pass/no pass only.

Ch 601**Research (Credit to be arranged.)**

Pass/no pass only.

Ch 603**Thesis (Credit to be arranged.)**

Pass/no pass only.

Ch 604**Cooperative Education/internship (Credit to be arranged.)****Ch 605****Reading and Conference (Credit to be arranged.)**

Pass/no pass only.

Ch 607**Seminar (Credit to be arranged.)**

Pass/no pass only.

Ch 610**Selected Topics (Credit to be arranged.)*****Ch 615****Selected Topics in Inorganic Chemistry (3)**

Current topics in inorganic chemistry such as advances in oxidation, solution chemistry, and fluorine chemistry. As subject matter varies, course may be repeated with consent of instructor. Prerequisite: Ch 411/511.

Ch 620*Selected Topics in Analytical Chemistry (3)**

Current topics in analytical chemistry such as chromatographic theory and methods, electroanalytical methods, electrochemical kinetics and analytical applications of spectroscopy. As subject matter varies, course may be repeated with consent of instructor. Prerequisites: graduate standing and consent of instructor.

Ch 621*Advanced Analytical Theory (3)**

Modern methods of analysis and their application to the analytical chemistry of elements. Prerequisites: Ch 425/525 and 442/542.

Ch 622*Trace Metal Analysis (3)**

Analytical methods for detecting and studying the chemistry of trace metals and ions, including optical, electrochemical, X-ray, neutron activation, mass spectrometric and gas chromatographic techniques. Use in studies of complexation, precipitation, redox and reaction rates of trace metals. Prerequisites: Ch 320, 321, 426/526.

Ch 623*Advanced Instrumental Analysis (3)**

Application of instruments to chemical research and analysis with emphasis on modern spectroscopic techniques. One lecture; two 3-hour laboratories. Prerequisite: Ch 426/526.

Ch 633*Organic Synthesis (3)**

Organic reactions, mechanisms and stereochemistry with application to multi-step synthesis. Recommended prerequisite: Ch 431/531.

Ch 634*Advanced Topics in Organic Chemistry (3)**

Current topics such as stereochemistry, natural products, pericyclic reactions, carbonium ions, heterocyclic and polycyclic compounds, organic photochemistry. As subject matter varies, course may be repeated with consent of instructor. Recommended prerequisite: Ch 431/531.

Ch 635*Physical Organic Chemistry (3)**

Modern concepts of physical-organic chemistry and their use in the study of mechanisms of organic reactions and reactivities of organic compounds. Recommended prerequisite: Ch 431/531.

Ch 660*Selected Topics in Physical Chemistry (3)**

Current topics in physical chemistry such as irreversible thermodynamics, advanced topics in spectroscopy, group theory, and kinetics. As subject matter varies, course may be repeated with consent of instructor. Prerequisite: consent of instructor.

Ch 661*Photochemistry (3)**

An introduction to the chemistry of the interaction of light with matter. Absorption and emission of light, photochemical and photophysical processes, photochemical kinetics and mechanisms. Reactivity of excited states of molecules and atoms. Prerequisite: Ch 441/541.

Ch 662*Chemical Kinetics (3)**

Chemical kinetics in the gas phase and in solution, catalysis, and absolute rate theory. Prerequisite: Ch 442/542.

Ch 663*Chemical Thermodynamics (3)**

The laws of thermodynamics and their applications. Prerequisite: Ch 442/542.

Ch 664*Quantum Chemistry (3)**

Principles of quantum mechanics with applications to chemical systems. Prerequisite: Ch 442/542.

Ch 665*Statistical Thermodynamics (3)**

Foundations of the subject with application to the equilibrium thermodynamics of gases, liquids, and solids. Prerequisite: Ch 664.

Ch 666*Solution Thermodynamics (3)**

Partial molar quantities, activities, stability theorems, thermodynamics of surfaces. Prerequisite: Ch 663.

† Carries graduate credit only for nonchemistry degrees.

‡ Alternate years.

Ch 670*Atmospheric Chemistry (3)**

Physical chemistry of the earth's atmosphere, including global chemical budgets, atmospheric thermodynamics, photo-chemical reactions in the lower and upper atmosphere, chemical properties of aerosols, and global climate change. Prerequisite: Ch 442/542.

Ch 693*Enzyme Structure and Function (3)**

Chemical and physical properties of enzymes; energetics, kinetics, and mechanism of enzymatic reactions. Prerequisite: Ch 492/592.

Ch 695*Advances in Biochemistry (3)**

Current topics in biochemistry such as neurobiochemistry, membrane structure, differentiation,

metabolic regulation, bioenergetics, nucleic acids. As subject matter varies, course may be repeated with consent of instructor. Prerequisite: Ch 492/592.

Ch 696*Molecular Structure and Spectra (3)**

Quantum theory applied to molecular structure and to the interpretation of rotational, vibrational, electronic and magnetic-resonance spectra. Prerequisite: Ch 442/542.

Chicano/Latino Studies

217 Cramer Hall
503-725-8504 or 503-725-3956
www.chla.pdx.edu

Certificate in Chicano/Latino Studies

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Certificate requirements

Chicano/Latino studies is the interdisciplinary study of social, cultural, political, economic, and historical forces that have shaped the development of the people of Mexico and other Latin American countries in the United States over the past 300 years. Emphasis is on the experience of the Chicano and other Latinos as residents and citizens in the United States and not in their countries of origin or descent.

The Chicano/Latino experience predates from the mid-19th century when territories belonging to Mexico were occupied by the United States. The Chicano and other Latinos living in the United States have, over the years, developed a rich and extensive literature. They have been involved in all aspects of American life and have made major contributions in all areas of society. In comparison with long-established, recognized academic fields, Chicano/Latino studies is still developing its critical perspectives and the formulation and application of new approaches and methodologies.

Graduates with a certificate in Chicano/Latino studies will have augmented their major field of study by broadening their scope of knowledge. They will have gained important insight into a very different culture within U.S. borders. This increased awareness and insight will lead to successful interaction on many levels of society. Graduates also will be better pre-

pared to enter the work force with its rapidly changing demographics.

In addition to meeting the general PSU requirements for a degree in any field, students pursuing a certificate in Chicano/Latino studies must complete 36 credits to be distributed as follows:

	Credits
ChLa 201 Introduction to Chicano/Latino Studies I.....	4
ChLa 301 Chicano/Latino Communities.....	4
ChLa 302 Survey of Chicano/Latino Literature.....	4
ChLa 303 Chicana/Latina Experience.....	4
Span 301, 302 Third-Year Spanish.....	8
Upper-division electives from the following (or other adviser-approved electives) including at least 4 credits at the 400-level.....	12
ChLa 330 U.S. Latino Popular Culture (4)	
ChLa 375 Southwestern Borderlands (4)	
ChLa 380 Latinos, the Economy, and Politics (4)	
ChLa 399 Special Studies (8)	
ChLa 405 Reading and Conference (4)	
ChLa 407 Seminar (4)	
ChLa 408 Workshop (4)	
ChLa 410 Selected Topics (8)	
ChLa 411 Chicano/Latino History (4)	
ChLa 414 Chicano/Latino Literature (4)	
ChLa 450 Latinos in the U.S. Education System (4)	
Total	36

Courses

ChLa 201**Introduction to Chicano/Latino I (4)**

An introductory history of Latinos in the United States. Beginning with Spanish colonization and moving to the recent migration of Latin and South Americans in the 1970s, 1980s, and early 1990s. Special attention will be given to particular events that shaped and influenced the Latino experience, such as the Mexican-American War, Repatriation, Bracero Program, World War II, War on Poverty, the Chicano Movement, and U.S. foreign policy in Latin America.

ChLa 301**Chicano/Latino Communities (4)**

Contemporary sociological studies and theory used to understand and explain the status of Chicanos and Latinos in the U.S. Topics will

include family, gender relations, immigration, work and employment, inter- and intra-ethnic and racial relations in the community.

ChLa 302**Survey of Chicano/Latino Literature (4)**

A representative overview of Chicano/Latino literature covering poetry, theater, novel, short story, and essay. The course will include literary techniques, modes of expression, trends in Chicano and Latino creativity, critical approaches, and will expose students to available bibliographic resources in the field.

ChLa 303**Chicana/Latina Experience (4)**

The social, political, and literary experience of women in the Chicano and Latino communities. The women's perspective and position in historical events, community organizing, and social issues will be explored through literature, art, music, and social science research.

ChLa 330**Latino Popular Culture (4)**

Explores a wide scope of Latino popular culture: highly produced entertainment (television, radio, film, magazines); commercial and non-commercial musical and artistic expression; popular celebrations; and the culture of "everyday life," from traditional folklore to newly invented customs and rituals. Popular culture is examined to reveal how Latino groups (Mexicans, Cubans, Dominicans, Puerto Ricans, etc.), reinvent their culture, heritage, and ethnic identity in the United States, and how Latinos in the process are changing American popular culture and national identity. Students will become familiar with theories of popular culture and get hands-on experience investigating a Latino popular culture form.

ChLa 375**Southwestern Borderlands (4)**

Social, economic, political organization, and representation of the United States/Mexico borderlands. While conflict characterizes the history of the interactions among border actors, the contemporary period reveals growing interdependence and economic integration. Explores cultural and social formations of Anglo-Americans and Mexican Americans in a dynamic contact zone, as well as the continuities and discontinuities in popular and academic representations of the border experience.

ChLa 380**Latinos in the Economy and Politics (4)**

Offers an overview of economic and political issues facing Latino communities in the United States, with an emphasis on labor market experience, the causes of poverty, and the role of political and civic organizations in shaping Latino ethnic identity.

ChLa 399**Special Studies (Credit to be arranged.)****ChLa 401****Research (Credit to be arranged.)**

Consent of instructor.

ChLa 405**Reading and Conference (Credit to be arranged.)**

Consent of instructor.

ChLa 407**Seminar (Credit to be arranged.)**

Consent of instructor.

ChLa 408**Workshop (Credit to be arranged.)**

Consent of instructor.

ChLa 410**Selected Topics (Credit to be arranged.)****ChLa 411****Chicano/Latino History Seminar (4)**

This course will take an in-depth look at the history of Chicano/Latino experience in this country examining such issues as the Treaty of Guadalupe-Hidalgo and its affect on Latinos.

Additional topics will include issues dealing with why the Puerto Rican and Cuban experience has been different than for other Latinos in this country. Recommended prerequisite: ChLa 201.

ChLa 414**Chicano/Latino Literature (4)**

Examination of the works created by some of the leading Chicano/Latino novelists, poets, and short fiction writers from the 1960s to present day. The

course will look at the impact of their work and how it impacts how Latinos view themselves and their place in American society. Recommended prerequisite: ChLa 203 or ChLa 302.

ChLa 450**Latinos in the Educational System (4)**

Surveys historical and contemporary social science research on the factors influencing the educational status of Latinos in the United States. A brief history of the Latino schooling experience serves as an introduction to current issues such as bilingual education, school segregation, and higher education access. Special attention is given to educational inequalities among Latinos and to the relationship between schooling and limited class mobility.

Prerequisite: upper-division standing.

Child and Family Studies

101L Sixth Avenue Building
503-725-8241
www.cfs.pdx.edu/

B.A., B.S.

Undergraduate program

The Child and Family Studies Program is for students who have varied professional goals related to working with children, youth, and their families. Students who are interested in becoming elementary school teachers, social workers, counselors, early childhood educators, or special educators are advised to consider a degree in Child and Family Studies (CFS). The degree is also appropriate for students seeking career pathways such as parent educators, family advocates, youth workers, social service caseworkers, program directors/administrators, and classroom assistants. Students gain an interdisciplinary perspective on children, youth, and families, a broad understanding of family systems, and a working knowledge of the diverse socio-cultural contexts in which children and families develop.

Program content integrates theory with practice. A liberal arts foundation, coursework in professional development and the application of content knowledge, practicum experiences in three diverse settings, and the completion of a Professional Portfolio prepare students for professional

roles as well as graduate school. Nine different specialization options within the degree program allow students maximum choice as they prepare for the diverse professions that are of interest to most students. These specializations include: human development, families in society, youth worker, administration of programs for children, youth and families, early childhood education, early intervention/early childhood special education, elementary education, and child welfare/human services. A strong emphasis is placed on preparing students to become professionals who are committed to becoming change agents in creating a more just world for children, youth, and families.

Admission requirements

Students must be admitted into the program to earn a baccalaureate degree in child and family studies. They are admitted as juniors (90 credits completed). Thirty applicants are admitted each term. Information meetings are held for students who are considering application into the program. Call 503-725-8241 to schedule attendance at an informational meeting. Information and application forms can be obtained by visiting the Web site: www.cfs.pdx.edu. The application packet includes a two to three page essay, an application form, completed reference forms, unofficial transcripts, and registry

with the Oregon Employment Department's Criminal History Registry. Students are accepted provisionally until they attend an Orientation meeting which is scheduled in the term prior to their admittance.

Degree requirements

Requirements for major. In addition to meeting the general University requirements, majors must complete the following program components:

	Credit
Interdisciplinary Conceptual Foundations.....	31
Ec 417 Women in the Economy (4)	
Ed 420 Introduction to Education and Society (4)	
Hst 343 History of American Families (4)	
Psy 311 Human Development (4) or	
Psy 460 Child Psychology (4)	
Soc 337 Minorities(4)	
Soc 342 Social Psychology (4) or	
Soc 339 Marriage and Intimacy (4) or Soc 461	
Sociology of the Family (4)	
SW 301 Introduction to Social Work (4) or	
Coun 441 Introduction to Counseling (4) or	
PHE 365 Health Promotion Programs	
for Children and Families (4)	
SpEd 418 Survey of Exceptional Learners (3)	
Child and Family Studies major requirements.....	30
CFS 409 Practicum (5)	
CFS 480 Societal Influences	
on Professional Practice (4)	
CFS 481 Family Health Issues (4)	
CFS 491 Conceptual Foundations	
in Child and Family Studies (4)	
CFS 492 Families and the State: Effects of	
Legislation and Policies on Children	
and their Families (4)	
CFS 494, 495, 496 Professional Development in	
Child and Family Studies, I, II, and III (2,1,1)	
CFS 498 Advanced Practicum (5)	
Child and Family Studies Specializations	15-17

Total 76-79

Majors may meet with a program adviser for guidance in the selection of an area of specialization from among the nine areas listed below. Majors are required to complete a minimum of four courses within the area. More than one specialization area may be selected and will require an additional 15-17 credits or four courses. Lists of courses recommended for each specialization are listed on the Web (www.cfs.pdx.edu) and are subject to change based on an on-going assessment and course availability. The specialization adviser will assist the student in tailoring a program of courses to meet career goals and to accommodate previous professional experience.

The Specializations are:

Human Development

Advisers: Lynn Santelmann, Applied Linguistics; Carol Morgaine, Child and Family Studies

Designed to focus on development in the social, cognitive, physical, and emotional domains. Theory and research related to development will extend to current issues of diversity and to implications for professionals working with children and families.

Families in Society

Advisers: Pete Collier, Sociology; Carol Morgaine, Child and Family Studies

Designed to examine societal contexts within which families live. Families will be studied from the perspectives of culture, gender, health, and socio-economics. Approaches to working with families will be developed with sensitivity to the diversity of family structures, traditions, and dynamics.

Youth Worker

Adviser: Michael Taylor, Child and Family Studies

Designed to foster understanding and provide skills for working directly with school-age children and adolescents in youth organizations and social services agencies. Coursework prepares youth practitioners from the perspective of multiple disciplines, with emphasis on the development of cultural competence in working with youth and their families.

Administration of Programs for Children, Youth, and Families

Advisers: Ellie Justice, Helen Gordon Child Development Center; Carol Morgaine, Child and Family Studies

Designed to develop understanding and provide strategies for administration of programs for children, youth, and families.

There is a focus on communication, with sensitivity to issues of culture, race, and economics.

Early Childhood Education

Advisers: Christine Chaille, Curriculum and Instruction; Sara Davis, Curriculum and Instruction

Designed to develop understanding and provide approaches for working with children and their families in early childhood education settings. This area of study will focus on developmentally appropriate curriculum and guidance, and the development of relationships with families.

Early Intervention/Early Childhood Special Education

Adviser: Leslie J. Munson, Special Education and Counselor Education

Designed to develop knowledge and skills for serving young children with special needs and their families in inclusive settings or to prepare for graduate studies in early intervention/early childhood special education or related fields (e.g., social work). Coursework includes a focus on typical and atypical development, foundations of early intervention/early childhood special education, and family-centered practices.

Special Education for School-Aged Children

Adviser: Leslie J. Munson, Special Education and Counselor Education

Designed to develop knowledge and skills for serving children and youth with special needs and their families in inclusive settings or to prepare for graduate study in special education for school-aged children or related fields (e.g., social work).

Coursework includes special needs and disabilities of children and youth, foundations of special education, and supports for children and youth within school, home, and community.

Elementary Education

Advisers: Christine Chaille, Curriculum and Instruction; Sara Davis, Curriculum and Instruction

Provides the necessary requirements for application into PSU's Graduate Teacher Education Program (GTEP). All the classes included in the Elementary Education specialization are all prerequisites for this graduate program. Admission into the GTEP program is not guaranteed.

Child Welfare/Human Services

Advisers: Michael Taylor, Child and Family Studies; Mindy Holliday, Social Work, Child Welfare Partnership

This specialization is designed to provide basic competence in entry-level human services positions in child welfare (child protective service, foster care, adoptions, in-home services, case management, group care), mental health, and community-based organizations. Working with children and families from diverse backgrounds (ethnic, racial, economic, sexual orientation) is emphasized.

All courses submitted to satisfy the requirements for a major in Child and Family Studies must be passed with a grade of C or above. In addition, courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling program major requirements.

Courses

**CFS 401
Research (Credit to be arranged.)**

**CFS 404
Cooperative Education/Internship
(Credit to be arranged.)**

**CFS 405
Reading and Conference
(Credit to be arranged.)**

**CFS 406
Projects (Credit to be arranged.)**

**CFS 407
Seminar (Credit to be arranged.)**

**CFS 408
Workshop (Credit to be arranged.)**

**CFS 409
Practicum (Credit to be arranged.)**
Supervised community-based learning experience in organizations and agencies that serve children and families. One credit equals 30 hours. Includes reflective, integrative seminar.

**CFS 410
Selected Topics (Credit to be arranged.)**

**CFS 480/580
Societal Influences
on Professional Practice (4)**

Individuals preparing for human or social services professions have been influenced by family and societal events, values, beliefs, and assumptions which have interacted with their lives. Students will examine those influences (including gender, culture, and socioeconomic status) for the purpose of gaining insight into the ways their professional practice might be affected. Projects will include a "professional practice action plan."

**CFS 481
Family Health Issues (4)**

Overview of issues related to family health, including health promotion/prevention domes-

tic violence/child abuse, alcohol/chemical dependence, chronic and terminal illnesses, and accessing health systems. Special attention to ethnic, political, ideological, religious, economic, and geographic influences. Includes community-based learning components. Prerequisite: junior standing.

**CFS 485/585
Working with Diverse Families (4)**

For individuals who are preparing to work professionally with families. Theoretical perspectives on working with families. Issues involved when working with diverse U.S. families (African American, Asian, Russian, and Hispanic) as well as international families.

CFS 490

Sex and the Family (4)

Explores how responses to sexuality are influenced by family and other social systems including culture, gender, economics, and religion. Family systems theory will be used to evaluate family relationships. Prerequisite: junior standing.

CFS 491/591

**Conceptual Foundations
in Child and Family Studies (4)**

Theoretical and conceptual foundations of working with children, youth, and families in professional settings. Historical, socio-political contexts of significant theories and their relevance for professional application. Prerequisite: junior standing.

CFS 492

**Families and the State: Effects of
Legislation and Policies on Children and
Family**

Laws and policies that influence the well-being of families, youth, and children will be examined from a historical, socio-political perspective. Analysis of contextual influences and community-based learning experience will assist students in practical applications related to professional roles. Prerequisite: junior standing.

CFS 493

**Community Resources
and Family Support (4)**

Examination of community resources in the context of community building, family support and empowerment, cultural competence, and cultural democracy. Factors that influence the effectiveness of community programs serving children and families. The mission, professional roles, and services of particular community agencies and programs that serve, support, and/or advocate on behalf of children and families. Prerequisite: junior standing.

CFS 494

**Professional Development in Child
and Family Studies I (2)**

Introduces students to interdisciplinary perspectives and the ways in which personal development, professional identity, and professional action contribute to one's professional development. Emphasis will be on reflection, personal ethics, self care, career options, and scholarly foundations. Prerequisite: admittance into child and family studies program.

CFS 495
Professional Development in Child and Family Studies II (1)

Continued examination of interdisciplinary perspectives and the ways in which personal development, professional identity, and professional action contribute to professional development. Emphasis will be on reflective practice, professional ethics, professional boundaries, professionalization processes, legislation, and advocacy. Prerequisite: CFS 494.

CFS 496
Professional Development in Child and Family Studies III (1)

Final examination of interdisciplinary perspectives and the ways in which personal development, professional identity, and professional action contribute to professional development. Emphasis will be on reflective practice for social justice, goal setting, self-directed learning, codes of ethics, and leadership. Prerequisite: CFS 495.

CFS 498
Advanced Practicum (Credit to be arranged.)

Child and family studies practicum conducted in approved professional settings selected with consideration of students' professional goals. Accompanying seminar. Prerequisite: admittance into the CFS program, five credits in CFS 409, and senior status.

Communication[†]

23 Neuberger Hall
 503-725-5384
 www.comm.pdx.edu

B.A., B.S.
Minor
M.A., M.S.

Undergraduate programs

The Department of Communication[†] offers programs leading to degrees at both the undergraduate and graduate levels.

The courses offered in communication studies are based on the premise that an educated individual must be able to think critically and analytically, comprehend political, social, cultural, institutional, international, and mediated contexts, listen effectively, and be rhetorically sensitive and adaptive to communicative encounters with persons of diverse abilities, backgrounds, and situations: interpersonal, small group, organizational, political, international, media, policy, and public. The effective communicator has an understanding of the complexity and dynamic nature of the communication process, as well as a sense of responsibility for the substance and consequences of communicative interaction. Students have the opportunity to apply communication skills and concepts directly through internships in the community and other practical communication activities, both in the classroom and in the community.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

All classes in the major or minor must be taken for a letter grade and only classes graded C or better will be counted toward the major or minor.

Requirements for major in communication studies. In addition to meeting the general University requirements, the student must complete a minimum of 56 credits in communication courses.

	Credits
Sp 100 Introduction to Speech Communication.....	4
Sp 220 Public Speaking.....	4
Wr 222 or Wr 333	4
Sp 311 Communication Inquiry.....	4
Sp 416 Theories of Communication.....	4

Of the required total of 56 credits in communication, note the following restrictions:

- ◆ At least 24 must be in upper-division communication studies courses.
- ◆ No more than 12 credits may be counted toward the major from courses numbered Sp 401 through Sp 409.

Requirements for minor in communication studies. To earn a minor in communication studies, a student must complete 28 credits with a minimum of 16 credits at the upper-division level. Total for Sp 404 and Sp 409 may not exceed 8 credits. A minimum of 12 credits must be taken in residence at PSU.

Graduate program

The Department of Communication offers graduate work leading to the degrees of Master of Arts and Master of Science in communication studies.

Admission requirements

Admission to the program occurs once a year. All materials are due by March 1 to be considered for fall term admission.

For admission to graduate study, the student's background and preparation should reflect an ability to pursue graduate work in communication studies. It is not required that the applicant have an undergraduate degree in communication; students with undergraduate backgrounds in related disciplines are encouraged to apply. Should the student's preparation be deemed inadequate in certain areas, the student will be required to overcome those deficiencies through formal coursework and/or directed readings. All such work is separate from work toward the master's degree.

Communication Studies. Applicants to the communication studies program must submit letters to the graduate committee explaining their reasons for pursuing an advanced degree in the communication studies discipline. Additionally, each applicant must submit three letters of recommendation from individuals closely acquainted with the applicant's academic career and, where applicable, with the applicant's professional background and competencies. Applicants must also submit supporting materials and transcripts. For a list of requirements contact the department and see the department's website.

All students are admitted to the program on conditional status. Regular status and retention in the graduate program requires the satisfactory completion of 12 graduate credits with a minimum grade of 3.00 in each course and evidence of satisfactory progress toward the degree.

Degree requirements

University master's degree requirements are listed on page 70.

Master of Arts or Master of Science in communication studies. Students entering this program are expected to develop an understanding and appreciation of the theoretical, conceptual, and methodological breadth of the discipline and to develop expertise in the pursuit of their particular

[†] Communication and Speech and Hearing Sciences are now two separate departments.

[‡] The Department of Communication was formerly the Speech Communication Department.

interests in the study of communication. In conjunction with the student's adviser, each student will design a program based upon particular interests in interpersonal, group, organizational, intercultural, media studies, and international communication.

Students engage in research using critical, cultural, qualitative, or quantitative research methods. The master's program in communication studies includes three options: thesis with 45 credits; communication project with 45 credits; or coursework with 54 credits.

The master's degree program requires a minimum of 45 credits of coursework for those students who elect to complete the thesis or communication project option. Six credits of the 45 total are to be taken for the thesis or communication project. Students electing the thesis option will take Sp 503 Thesis, while students electing the communication project will take Sp 506 Communication Project.

The third option, a coursework option master's program, consists of a minimum of 54 credits of coursework with 4 credits to be taken in a graduate level theory or research seminar designated as a final integrative course to be taken during one of the final two quarters of study.

Each student's program must be based upon the following courses.

1. *Theory, History, and Methods.* Complete a, b, and c.

a. Sp 511 Introduction to Graduate Studies (must be taken the fall term of the first year of graduate studies)

b. Sp 516 Theories of Communication (unless previously taken as Sp 416)

c. At least one course in research methods: Sp 521 Quantitative Methods of Communication Research or Sp 531 Qualitative Methods of Communication Research or Equivalent courses in another department

2. *Areas of Emphasis.* All graduate students are expected to develop a theoretical competency in at least two areas of emphasis. For the thesis, areas of emphasis will be designed in consultation with the student's adviser. For the communication project, areas of emphasis and coursework to support the project are designed in consultation with the student's adviser. In the case of the coursework master's students will select, with approval from the student's program adviser, the most appropriate final integrative course to complete coursework. Areas of emphasis currently supported in this department include: interpersonal, group, organizational, intercultural, media studies, and

international communication. Other areas of emphasis may be developed, according to particular student needs, in consultation with the program adviser, project director, or thesis director.

3. *Core Coursework.* Students are required to complete core coursework in communication. Students are expected to take relevant courses outside the department in support of their core coursework. Courses taken outside the department must be approved by student's program adviser in order to count toward the requirements of the degree.

4. *Program Option.* Complete one of the following.

a. *Complete Thesis.* Students who are interested in an academic career or anticipate advanced graduate work leading toward a Ph.D., may prefer to elect the thesis option. Each student who elects the thesis option will complete a thesis and pass a final oral examination on the thesis. The thesis director and thesis committee will usually be selected, in consultation with the program adviser, during the first three terms of study. Prior to beginning work on the thesis, students must demonstrate proficiency in relevant theories and research methods.

b. *Graduate Communication Project.* The graduate communication project is intended to meet the needs of graduate students whose primary interests are applied rather than academic, and who expect to be employed in business, industry, or government. Each student who elects the graduate communication project option will complete a communication project undertaken as an individual or team activity. The project will focus on application of acquired knowledge and problem solving to actual communication situations and will be grounded in an in-depth literature review. Completion of the communication project may take place in 6 credits of Sp 506 Special Project. Sp 510

Communication Consultation may be substituted for 4 credits of Sp 506.

c. *Coursework Option.* The third option, a coursework master's program, consists of a minimum of 54 credits of coursework, including 4 credits to be taken as the final integrative course. The integrative course must be a 500 level graduate seminar that is identified in advance and should be taken during one of the final two quarters of coursework.

Courses

Courses with an asterisk () are not offered every year.*

Sp 100

Introduction to Communication (4)

Overview of major topic areas in communication, including models of communication, social uses of language, communication codes-verbal/nonverbal, listening and communication in interpersonal, group, intercultural, public, and mass media contexts. Application of theory through skills development and community focused assessments.

Sp 199

Special Studies (Credit to be arranged.)

Sp 212

Mass Communication and Society (4)

A survey of the development of print, broadcast, film, and new communication technology as social, cultural, and economic forces in American society. Examination of news media and their relationship to American political institutions. Discussion of advertising as an economic and popular cultural force. Survey of major trends in mass communication research. Class research project examines content of contemporary commercial media.

Sp 215

Introduction to Intercultural Communication (4)

Designed to give a theoretical understanding of the process and role of communication (both mass and interpersonal) when faced with cultural plurality. Provides a background of classical theories in intercultural communication, and in interdisciplinary areas (cultural studies, gender studies, cultural anthropology, political science, and international development) where culture and communication have been theorized. Discussions will focus on the changing cultural terrain in the United States and upon internationalization and globalization of mass or popular culture as it impacts other parts of the world.

Sp 218

Interpersonal Communication (4)

Study of communication concepts, processes, and practices in interpersonal contexts with application of principles and concepts to actual interpersonal communication situations. Includes situational management and behavioral repertoire development, verbal/nonverbal code features structuring conversation and relationships, characteristics of functional relational systems, intercultural/inter-ethnic factors.

Sp 220

Public Speaking (4)

Research, writing, delivery, and listening skills for oral presentation in a variety of settings, including multicultural. Equal consideration given to speech preparation and delivery with critical thinking, argument forms, and audience analysis emphasized. Issues of speech anxiety addressed.

Sp 227

Nonverbal Communication (4)

The study of nonverbal communication as related to verbal communication. Course emphasis on theories and typologies of nonverbal behavior. Examination of the influence of such factors

as para-language, body movement, eye behavior, touch space, time, and physical and social environments. Course requirements include completion and report of a personal research project.

Sp 230
Listening (4)

Listening as an integral part of the communication process. The contextual nature of competent and incompetent listening behavior is presented. Topics include: knowing when to use emphatic listening instead of sympathetic listening, refraining from using biased listening when comprehensive listening would be appropriate. Opportunity to observe, assess and evaluate competent and incompetent listening behavior in an extensive skill-building project.

Sp 311
Communication Inquiry (4)

Introduction to the assumptions and methods of inquiry in the study of human communication. Students will learn to design and conduct practical research projects and improve their ability to understand, evaluate, and use reports of research and scholarship encountered in future coursework and in everyday life. Prerequisite: Wr 222 or 333.

Sp 312
Media Literacy (4)

Focuses on building critical skills for evaluating mass media, going beyond the ways that messages represent the world to the ways that messages and the institutions that produce them actually constitute the social world. Primary issues include cultural domination and empowerment; public opinion and the legitimizing role of the media; mass culture and ideology; cultural opposition; the political-economy of news media; and the general role of media in political socialization. Extensive in-class and small-group media analysis.

Sp 313
Communication in Groups (4)

Focuses on communication processes in small, decision-making groups. Students examine the relation between actual communicative behaviors of group members and group structure, functions, and outcomes. Topics include leadership emergence and enactment, quality of problem solving strategies utilized, the impact of socio-cultural and institutional features on small group communicative practices. Theoretical application in the critical analysis of various group settings and effective communication in ongoing group projects.

Sp 314
Persuasion (4)

A consideration of concepts, principles, and theories related to persuasion, and a consideration of the role of persuasive communication in public discourse. Opportunity for practical application of principles in student projects. Sp 100 or Sp 220 recommended.

Sp 317
Communicating About Violence and Children (4)

Examination of theory and practice for the improvement of communication with children (primarily grades K-6), regarding issues of child abuse (emotional, physical, sexual, and domestic violence). Professional and interpersonal contexts are addressed. Multiple communica-

tion issues in relationship to children and violence include: cultural values and beliefs, stereotypes, media representations, language use, nonverbal communication, power, control and conflict.

Sp 318
Family Communication (4)

Focuses on the study of families from a communication perspective; that is, how families create, maintain and reinforce patterns of interaction through daily living, story-telling and other habitual forms of communication. Course applies theoretical frameworks such as family systems theory, social construction theory and dialectical theory to issues of courtship and relational development, the changes in the life of families, and family roles.

***Sp 320**
Advanced Public Presentation (4)

Designed for students who have basic experience in choosing, researching, organizing, and presenting speeches, and who wish to augment their skills in being a more dynamic and effective public speaker. The course requirements will include several speeches presented in class, one speech which must be presented in a different setting, practice in impromptu speech making, as well as sharpening skills in audience-centeredness. Prerequisite: Sp 220.

Sp 324
Critical Thinking and Argumentation (4)

A study of the relationship among evidence, reasoning, and argument. Course examines formal reasoning as well as practical argument in its actual forms and uses in everyday life. Primary emphasis upon students' ability to analyze evidence, forms of reasoning, and arguments that structure public issues of the day. Strongly recommended for all communications majors.

***Sp 329**
Oral Presentation and Performance (4)

The oral interpretation of the literature of prose and poetry. Concerned with the study of meaning in selected pieces of literature, and the development of vocal skills for the effective communication of meaning to others. Projects in public presentation and program development.

Sp 337
Communication and Gender (4)

Study and practice of the skills involved in competent communication (primarily comprehensive listening and reading, and speaking and writing) in order to separate myths, assumptions and notions from the facts, realities and truths about communication and about women and men. Examination of communication and gender topics will include: the role of anger in communicating about gender issues; the impact of the type of information on discussions about gender; gender difference as a "catch all" explanation for gender problems; the facts of differences being confused with attitudes about differences; perception of women and men as speaking different languages and communicator behaviors as choices.

Sp 340
Interviewing (4)

A study of principles for effective interviewing with emphasis upon information-gathering, in-depth interviewing. Examine interview structures, preparation of interview schedules, ques-

tion phrasing, approaches to interviewer-interviewee relationship. Specific interview contexts will vary among employment, performance appraisal, helping, and focus group, and will be examined from both interviewer and interviewee perspectives. Prerequisite: upper-division standing. Sp 218 recommended.

Sp 399
Special Studies (Credit to be arranged.)

Sp 401/501
Research (Credit to be Arranged.)

Consent of instructor. Communication Laboratory.

Sp 404/504
Cooperative Education/Internship (Credit to be Arranged.)

Sp 405/505
Reading and Conference (Credit to be arranged.)

Consent of instructor.

Sp 406/506
Special Projects (Credit to be arranged.)

Consent of instructor.

Sp 407/507
Seminar (Credit to be arranged.)

Sp 408/508
Workshop (Credit to be arranged.)

Sp 409/509
Practicum (Credit to be arranged.)

Sp 410/510
Selected Topics (Credit to be arranged.)

***Sp 412/512**
Empirical Theories of Mass Communication (4)

Surveys social scientific theories of mass communication. Prerequisite: Sp 212, Stat 243, Sp 314, or Psy 342 recommended.

Sp 415/515
Problems of Intercultural Communication (4)

Builds upon the theories and issues discussed in the introductory course by including contemporary and classical literature on multicultural and intercultural communication. Identifies and analyzes politically constructed categories of race, age, class, gender in society against the backdrop of debates on multiculturalism in the United States. Examines these categorizations of race, class, etc. in their historical, social, and cultural context, and how those have influenced mass-mediated and interpersonal communication. Uses mass media (television, radio, daily print media, music) texts to provide examples of how we understand "difference" and "otherness" in our daily lives. Prerequisites: junior/senior standing or instructor permission.

Sp 416/516
Theories of Communication (4)

Examines the major lines of theoretical development in the study of human communication, as well as examining their diverse and alternative assumptive bases for theory construction and critical analysis. Course offered multiple times each year. Prerequisites: senior-level standing.

***Sp 417/517**
Communication and Conflict (4)

Examines assumptions underlying the selection of communicative behaviors in conflict situations, and the assessment of choices for expected or desired consequences. Interpersonal, group, organizational, intercultural and international settings are examined. Examination of traditional and

nontraditional approaches to conflict management. Required development of case study applying concepts of the course, and class presentation. Sp 218, 313, 314, or 324 recommended.

***Sp 418/518**

Advanced Interpersonal Communication (4)

Theory course in which students analyze current concepts and theories related to interpersonal communication, comparing and contrasting various models and their relative adequacy in representing the complexity of communication processes. The impact on actual communicative practices is examined. The influence of particular historical perspectives and contemporary issues and trends on interpersonal communication is analyzed through evaluation of empirical data and general cultural texts. Research project required.

Sp 419

Gossip and Shop Talk: Interpersonal Challenges in the Workplace (4)

Designed for students in professions where communication competencies are central to their positions, for those interested in developing as communication professionals or for those interested in learning about the seemingly intangible factors which contribute to the casually referred to "people problem" in the workplace. Assessment of positive and negative interpretations of gossip; techniques to improve communication climates. Recommended prerequisite: upper-division standing.

Sp 420/520

Political Communication (4)

An analysis of the relationship of communication to the exercise of politics and political power. Topics may include the ethics and practices of electoral politics, political ideologies, political advertising, propaganda, public opinion formation, the role of mass media as a source and form of political communication, speech writing, public policy writing and analysis, political news writing, and political campaigning. The focus is on how communication strategies and media can be used to organize consent or dissent to ruling parties, representatives, and ideas. Sp 212 recommended.

Sp 422/522

Critical Theories in Mass Communication (4)

Surveys critical and institutional theories of mass communication. Primary focus is analysis of the relationship between media and communication institutions and the state and other social institutions. Prerequisite: upper-division standing.

Sp 423/523

Organizational Communication (4)

Application of communication theory to the study of human interaction in the organizational context. Examination of the relationships between structural variables in the organization and informal communication channels, including analysis of leadership style, decision-making, conflict management, and computer-mediated communication. Course requirements include completion and report of a personal research project. Prerequisite: upper-division standing. Sp 218 and Sp 313 recommended.

***Sp 426/526**

The Rhetorical Tradition (4)

Survey of the major contributors, themes, and theory development in the 2500 year rhetorical

tradition examining public discourse in the management of human affairs. Among the periods examined will be Classical, Enlightenment, contemporary 20th century, and post-modernist. Special attention given to the significance of earlier treatments of rhetoric to contemporary circumstances. Prerequisite: Sp 314 or Sp 324.

***Sp 427/527**

Issues in International Communication (4)

A study of historical and contemporary theories and practices in the conduct of trans-border communication. Topics may include international communication issues of law, diplomacy, conflict, the Cold War, international organizations, mass media, information, advertising and news flows, and social-economic development, as well as discussions of specific cases of cultural and institutional communication, spoken, written and produced, in various industrial and developing societies. Prerequisite: upper-division standing or graduate standing.

Sp 430/530

Advanced Speaking and Listening Skills (4)

Advanced work in the theory and practice of effective speaking and listening, employee and client relations, and competency assessment. Addresses characteristics that differentiate effective from ineffective communication. Develop and implement a model for communication skill building through behavior modification. Recommended prerequisite: senior or graduate standing.

***Sp 436/536**

Communication and Cognition (4)

Exploration of human communication from a cognitive perspective. Prerequisite: graduate standing or Sp 416 (or equivalent) and consent of instructor.

***Sp 437/537**

Urban Communication (4)

Course utilizes a cultural, contextual approach to the study of urban communication structures, processes and practices. Macro and micro features are examined with the goal of understanding the role of communication in structuring social life in urban environments. Relevant theories on urban life and multiple dimensions of verbal and nonverbal communication codes are examined as they apply in urban contexts. Theoretical and empirical approaches recognize urban centers as dynamic multicultural environments. Research project required. Prerequisites: senior-level or graduate standing.

***Sp 447/547**

Communication and Aging (4)

Focuses on the intersecting areas of communication and gerontology. Ages of communicators as variables affecting the process and outcome of interaction. Students examine communication and aging through interaction (intrapersonal, interpersonal, intercultural) and through context (organizational, family, medical.) Student projects include interviews with elderly subjects and case studies.

Sp 452/552

Gender and Race in the Media (4)

Primarily examines the representations of gender and race, including age, class and sexual orientation in various media (mainstream and alternative), and will examine approaches which may be used to interpret these representations.

In addition, considers the potential impact that media institutions have on people's lives, political decisions and social relations. The overall aim is for students to understand how their own cultural identities affect their media consumption and social positioning. This course is the same as WS 452; course may only be taken once for credit.

Sp 457/557

The Language of Violence (4)

Examination of violent language as a reflection of culture. Students will identify violent attitudes, themes, contradictions, metaphors, etc. implicit and explicit in our language. Verbal abuse and verbal aggression, violent words and metaphors in everyday speech, and the use of descriptive language to evaluative language when classifying acts of violence will provide insight into the notion of a "public violent mind." Students will also examine messages in violent entertainment, news reports, Internet, and other media. This course is the same as WS 457; course may only be taken once for credit.

Sp 503

Thesis (Credit to be arranged.)

Sp 511

Introduction to Graduate Studies (4)

Introduction to the development and scope of the communication discipline, including a critical examination of the lines of inquiry and methods of investigation that shape the discipline. Emphasis is placed on those elements of scholarly inquiry that enable students to become competent consumers of current research and contribute to their ability to conduct original research in communication.

***Sp 513**

Seminar: Communication in Institutional Contexts (4)

Various configurations and features of institutional life are examined. The impact of culture, politics, media on organizational communicative structures and processes, communication consultation, institutional-community interface are among the topics covered. Current research is examined. Students conduct an organizational research project. Prerequisite: graduate standing or instructor permission. Repeatable for credit.

***Sp 514**

Seminar: Communication, Culture, and Community (4)

Examination and analysis of human symbolic activity as the management of meaning, with the capacity to shape and influence thought, action, and world view. Particular attention given to assumptions regarding intent, effects, meaning, understanding, and interpretation, and their implications for studying persuasion from modernist and post-modernist perspectives.

***Sp 521**

Quantitative Methods in Communication Research (4)

An examination of the methods of quantitative empirical research in communication. Emphasis is upon selected research designs, data collection and analysis, data input for computer analysis with statistical packages, results interpretation, and writing reports of completed research. Prerequisite: at least one course in statistics.

***Sp 525 Seminar: International Communication and Culture (4)**

Study and analysis of the international dimensions of communication. Focus is on understanding the cultural and power contexts and differences among and between peoples and institutions that establish the boundaries in the exchange of meanings, values, and ideas. Emphasis is given to questions of cultural, economic and political sovereignty in the pursuit of national, regional, and personal identity and development.

***Sp 528 Seminar: Communication in Relational Contexts (4)**

Advanced work in interpersonal communication theories, and concepts such as family, aging, and conflict. Critique of current research in light of such considerations as cultural constraints, shifts in relational definitions and configurations. Research project. Prerequisite: Sp 518, graduate standing or permission of instructor.

***Sp 531 Qualitative Methods in Communication Research (4)**

An examination of naturalistic empirical communication research and the assumptive bases. Particular attention given to descriptive, interpretive, and critical approaches for analysis, and to specific methods of participant observation, interviewing, and textual analysis. Critical examination of selected research as models for original student research. Prerequisite: Sp 511.

***Sp 533 Seminar: Organizational Communication (4)**

Examines the implications of evolving perspectives in organizational theory, as well as cultural factors which may influence communication processes in the organizational context. Different approaches to assessing organizational communication processes are considered with relevance to enhancing organizational effectiveness and facilitating organizational transition and change. Course requirements include completion and report of a research project.

***Sp 541 Methods of Rhetorical Criticism (4)**

An examination of philosophical and conceptual bases of contemporary rhetorical theory and their implications for the conduct of rhetorical criticism. Selected approaches to criticism examined, along with exemplars for analysis. Special attention given to critical invention, and to the social positioning of the critic. Students will select and examine a specific example of contemporary rhetoric. Prerequisite: Sp 511.

***Sp 556 Seminar: Language, Meaning, and Interpretation (4)**

Exploration of cognitive, linguistic, and interpretive approaches of emerging interest in the study of human communication. Specific topics vary with instructor. Prerequisites: Sp 511 and Sp 516 (or equivalent courses from other departments), graduate standing or consent of instructor.

Economics

241 Cramer Hall
503-725-3915
www.econ.pdx.edu/

B.A., B.S.
Minor in Economics
Minor in International Economics
Minor in Political Economy
Secondary Education Program—
Social Science

M.A., M.S.
M.A.T. and M.S.T.
(General Social Science)

Ph.D. in Systems Science-Economics
Ph.D.—Participating department in Urban Studies Doctoral Program

The program in economics is designed to meet four major objectives: to provide a basic knowledge of economic analysis for the student intending to do undergraduate work in preparation for a professional career in business or government; to serve as the core of a liberal arts program for students planning to enter business or industry directly upon graduation; to provide courses preparing students for graduate work in economics; and to present courses that offer insight into the economic problems of the day.

Undergraduate programs

The major in economics is required to take 42 credits in economics courses, plus specified courses in mathematics and statistics. Many majors concentrate their elec-

tives so that they in effect establish a minor in business administration, engineering, mathematics, or one of the other fields in the social sciences.

Admission requirements

As soon as students decide to become economics majors, they should consult the department secretary for referral to the appropriate adviser. Economics majors who anticipate that they may do graduate work in economics should consult their adviser to develop a proper background program.

Admission to the department is based on general admission to the University. See "Admissions requirements" on page 45 for more information.

Degree requirements

Requirements for major. In addition to meeting the general University degree requirements, the major in economics must meet the following departmental requirements:

	Credits
Ec 201, 202 Principles of Economics	8
Ec 375 Macroeconomic Theory	4
Ec 376 Microeconomic Theory	4
Ec 370, 456, 457, 460 (any one course)	4
A minimum total of 24 credits of 300 and 400-level coursework, including Ec 370, 456, 457, and 460 when not used to satisfy the 4-credit requirement immediately above. At least 12 of these credits must be in courses numbered above 410. Ec 370 will be treated as a 400-level course, and Ec 101 may be counted as if it were a 300-level course, if the student earns a B or better).....	
	24
Total in economics	44

Mth 241 Calculus for Management and Social Science or	
Mth 251 Calculus I	4
Stat 243, 244 Introduction to Probability and Statistics	8
Stat 366 Introduction to Experimental Design	4
Total in other fields	16
Total	60

Majors must take a minimum of 16 credits of coursework in residence from this department and must maintain at least a 2.00 grade point average in work completed in this department.

All courses used to satisfy the departmental major requirements, whether taken in the department or elsewhere, must be graded C- or above.

Requirements for minor in economics. To earn a minor in economics a student must complete 28 credits (12 credits of which must be taken in residence at PSU), to include the following:

	Credits
Ec 201, 202 Principles of Economics	8
† Upper-division economics electives (No more than 8 credits of Ec 410 and 300-level courses other than Ec 370, 375, and 376 will be accepted for this minor. No omnibus courses other than 399 and 410 will be accepted)	20
Total	28

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling department minor requirements.

Requirements for minor in international economics. To earn a minor in international economics a student must complete 28 credits (12 credits of which must be taken in residence at PSU), to include the following:

† Additional prerequisites may be required.

	Credits
Ec 201, 202 Principles of Economics	8
Ec 440 International Trade Theory and Policy	4
Ec 441 International Monetary Theory and Policy	4
Upper-division economics electives chosen from: 12	
Ec 442 The Multinational Enterprise in the World Economy	
Ec 445 Comparative Economic Systems	
Ec 446 Economic Systems of East Asia	
Ec 447 Economics of Transition	
Ec 450 Third-World Economic Development	
	28

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward filling department minor requirements.

Requirements for minor in political economy. To earn a minor in political economy a student must complete 28 credits (12 credits of which must be taken in residence at PSU), to include the following:

	Credits
Ec 201, 202 Principles of Economics	8
Ec 460 History of Economic Thought	4
Economics electives chosen from:.....	16
Ec 101 Contemporary Economic Issues	
Ec 338 The Political Economy of Latin America	
Ec 345 Marxist Political Economy	
Ec 348 The Globalization Debate	
Ec 410 Political Economy of Japanese Development	
Ec 410 Women and Development	
Ec 411 Cultural Economics	
Ec 417 Women in the Economy	
Ec 419 The Economics of Race and Ethnicity	
Ec 445 Comparative Economic Systems	
Ec 446 Institutional Economics	
Ec 447 Economics of Transition	
Ec 450 Third-World Economic Development	
Ec 451 Small Businesses in Developing Areas	
	28

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling department minor requirements.

SECONDARY EDUCATION PROGRAM

Adviser: **M. King**

(See General Studies: Social Science on page 144)

Graduate programs

The Department of Economics offers graduate work leading to the Master of Arts and Master of Science degrees. The department also participates in the Urban Studies Doctoral Degree Program. Specialized theoretical and applied courses in economics, when combined with urban studies general seminars, partially fulfill the requirements for the Ph.D in Urban Studies with an emphasis in economics. The Department of Economics participates in the Systems Science Ph.D. Program. Candidates for the Ph.D. in Systems Science-Economics are encouraged to enroll in advanced courses in economics,

and may elect economics as a major or minor field of study within that program. For information relating to the Ph.D. programs, see pages 70 and 308.

Admission requirements

Master of Arts or Master of Science.

Admission to the master's program in the Department of Economics requires, in addition to the University admissions requirements:

1. A minimum of a 3.00 GPA in overall coursework and a minimum of a 3.00 GPA in economics coursework.
2. Completion of the core undergraduate courses in the Economics program at Portland State University, including theory, statistics, and econometrics, or present equivalent competence.
3. Have a cumulative GPA of 3.50 in all graduate credit earned at accredited institutions.

Degree requirements

Master of Arts or Master of Science.

Students must complete an eight-course core requirement, a research project, and three major elective courses. The research project will normally be undertaken in the student's second year of study, after completion of course requirements.

	Credits
Core economics courses.....	32
Ec 560 History of Economic Thought (4)	
Ec 576 Advanced Microeconomics (4)	
Ec 570 Econometrics (4)	
Ec 575 Advanced Macroeconomics (4)	
Ec 571 Advanced Econometrics (4)	
Ec 590 Applications of Advanced Macroeconomic Theory (4)	
Ec 591 Applications of Advanced Microeconomic Theory (4)	
Ec 595 Applied Advanced Econometrics (4)	
Economics electives.....	12
Economics research.....	8
Ec 596 Research Project I (4)	
Ec 597 Research Project II (4)	
	52

In order to complete the research project, each student must submit a written paper on a subject to be approved and supervised by two faculty members specialized in the field and methodology. (Note that field requirements have been eliminated.)

Courses outside of economics may be used to meet the elective requirements, subject to approval by a faculty adviser. A working knowledge of mathematics and statistical methods is required for all students. This requirement may be fulfilled by examination or by the successful completion of courses in mathematics and statistics approved by the department. Differential and integral calculus and linear algebra are highly recommended.

Conditionally admitted students must fulfill all conditions within the first two terms of their program unless special exemption is granted by the department graduate committee.

In addition to the general requirements for advancement to candidacy, the student must complete 12 credits in residence work for graduate credit in economics with a GPA of at least 3.00 and be recommended by the graduate committee of the department.

Any transferred graduate credits that satisfy University requirements may be applied toward major electives. Under no circumstances can the core requirements be waived or substituted for with coursework from other PSU departments or from other institutions. Students with questions concerning transferred credits should contact the departmental office for advising.

Doctor of Philosophy in systems science—economics. The Department of Economics participates in the Systems Science Ph.D. Program. Students interested in seeking a Ph.D. in systems science—economics should contact the Department of Economics for further information. Elective fields include: international economics, urban-regional economics, mathematical economics, and economic development. Applicants must be admitted simultaneously to the economics graduate program and the Systems Science Ph.D. Program.

Courses

Courses with an asterisk () are not offered every year.*

Economics does not allow credit for Ec 201, 202 after credit has been earned in an upper-division economics class for which Ec 201, 202 is a recommended prerequisite.

***Ec 101 Contemporary Economic Issues (4)**

Introduction to economists' approaches to some of the most pressing, current political and economic issues. Topics will vary depending upon the instructor, but are likely to include the sources of economic development and growth, what constitutes a desirable standard of living and quality of life, analyses of poverty and inequality, economic pressures on the family, and strategies for environmental sustainability.

Ec 201 Principles of Economics (4)

A study of the market system, involving the essentials of demand and supply analysis; competition and monopoly; labor public policy toward business; the distribution of income; international trade and commercial policy; comparative advantage, tariffs, and quotas.

Ec 202 Principles of Economics (4)

A study of factors affecting the level of national income: the essentials of money and banking; the role of government expenditure and taxation in achieving economic stability, growth, and development; international monetary issues including exchange rates and the balance of payments.

Ec 314**Private and Public Investment Analysis (4)**

Examines the tools required to analyze expenditures that yield benefits over time—investments. The use of accounting documents and a focus on the time value of money allows students to analyze choices in a variety of security, loan, and equipment investment decisions.

Ec 315*Economics of Sports (4)**

Investigates the application of economic theory to the particular arena of sports. Emphasis is placed on the theories of labor, industrial organization, and quantitative methods and their application to such topics as player compensation and movement, stadium financing, team relocation, and racial discrimination.

Ec 316**Introduction to Health Care Economics (4)**

Provides an introduction to basic economic concepts that are most relevant to the study of the health care system. Examines the efficiency and equity implications of providing health care under the traditional fee-for-service system versus providing health care under the relatively new systems of health care delivery such as health maintenance organizations (HMOs), preferred provider organizations (PPOs), etc. Compares the American health care system to the systems employed in other developed countries. Special attention will be paid to the delivery of health care in Oregon.

Ec 332**Economics of Environmental Issues (4)**

Examines several local, national and global environmental issues. Students will be introduced to some basic economic concepts and tools fundamental to understanding the social, economic and environmental impacts of current and proposed environmental policies.

Ec 338**The Political Economy of Latin American Development (4)**

Provides students an opportunity to analyze the political and economic complexities of development in Latin America. Studies the social, political, and economic institutions that have shaped the development process in Latin America; reviews competing theoretical frameworks; and discusses current issues such as the foreign debt, privatization, trade liberalization, and recurrent financial crises.

Ec 340**International Economics (4)**

Examines trade and financial relations among countries with an emphasis on policy perspectives. Outlines international policy options and the principles that govern world trade and financial arrangements. Regional and international trade organizations and currency arrangements will be discussed. Credit is not given for both Ec 340 and Ec 440 or Ec 441.

Ec 345*Marxist Political Economy (4)**

An inquiry into the contribution to social and economic thought advanced by Karl Marx. Based on reading and interpreting primary sources. Considers the legacy of Marx's ideas on the course of history in the 20th century, and the potential influence in the 21st century.

Ec 348**The Globalization Debate: Concept, History, and Theory (4)**

Works to clarify the meaning and conception of globalization. Analyzes its roots from a historical and evolutionary perspective dating from the nineteenth century, on to the present and future prospects. Applies an interdisciplinary methodology to present both the pros and cons of the globalization debate dealing with the World Trade Organization, environmental, third world development and labor concerns. Applies different economic theories to explain and analyze globalization in the context of the evolutionary dynamics of economic development.

Ec 370**Introduction to Quantitative Economics (4)**

General survey of quantitative techniques useful for economic analysis. Focus on the applications of mathematical tools and simple regression analysis in economics. Quantitative topics will be introduced systematically with hands-on case studies and examples. Recommended prerequisites: Ec 201, 202, Mth 241, Stat 243 and 244.

Ec 375**Macroeconomic Theory (4)**

Social accounting practices and problems. Factors influencing the levels of output, employment, and prices. Comparison of Keynesian and pre-Keynesian thought. Fundamentals of the theory of business cycles, economic growth, inflation. The role of government in dealing with these and related problems. Recommended prerequisite: Ec 202.

Ec 376**Microeconomic Theory (4)**

Theories of consumer behavior and demand, production and cost, the firm and market organization and functional income distribution. Recommended prerequisite: Ec 201.

Ec 399**Special Studies (Credit to be arranged.)****Ec 401/501****Research (Credit to be arranged.)**

Consent of instructor.

Ec 403**Honors Thesis (Credit to be arranged.)**

Consent of instructor.

Ec 404/504**Cooperative Education/internship (Credit to be arranged.)****Ec 405/505****Reading and Conference (Credit to be arranged.)**

Consent of instructor.

Ec 407/507**Seminar (Credit to be arranged.)**

Consent of instructor.

Ec 409**Practicum (Credit to be arranged.)**

By prior arrangement with the department, economics majors may receive a maximum of 3 credits in their total undergraduate program for economics research done in the community in conjunction with guided reading and regular consultations with the practicum instructor. Recommended prerequisites: Ec 201, 202, and consent of instructor.

Ec 410/510**Selected Topics (Credit to be arranged.)****Ec 411/511****Cultural Economics (4)**

Focus is on a general theory of economic development and growth, in the conceptual framework of culture and its evolution. The economic process fed by the dynamics of technological change is analyzed in cultural and social terms in the tradition of institutional and/or evolutionary economics. This framework is relevant and will be applied to current issues such as: globalization, trade, jobs and the environment, sustainable development, corporate power, cultural lags and social justice.

Ec 417/517**Women in the Economy (4)**

Different economic theoretical perspectives are presented to account for women's particular economic roles currently and historically. Emphasis on women's responsibility for child rearing and housework; women's relatively low wages; occupational segregation by gender; economic differences among women due to ethnicity, generation, and class; and policy issues with particular importance for women's economic situation. Recommended prerequisite: Ec 201.

Ec 419/519*Economics of Race and Ethnicity (4)**

Survey of the economic history of ethnic groups in the United States, various economic theoretical perspectives advanced to account for past and current experience of people of color in the U.S. economy, and examination of selected economic policy issues. Recommended prerequisite: Ec 201.

Ec 420/520*Money And Banking (4)**

Functional and empirical definitions of money and interest rates. Characteristics and role of bank and non-bank financial institutions in determining the level of money and interest rates. History of the Federal Reserve System. Instruments of monetary control by the Federal Reserve. Alternative models of monetary influence on the economy. Recommended: Ec 201, 202.

Ec 425/525*Economics of Industrial Organization (4)**

Study based upon the application of microeconomic theory to the analysis of firms, markets, and industries. Search for economic explanations for the structure of markets and for the behavior of the firms which trade in them. Seeks also to explain the internal organization of firms and to assess the efficiency of the market in determining organization. Recommended: Ec 201; Ec 376 recommended.

Ec 426/526*Economics of Regulation (4)**

Study of government regulation designed to control—or at least to influence—the performance of the market in specific ways. Historical and economic analyses of three main forms of regulation: direct regulation of monopoly and competition, and social regulation to protect the environment and the individual. Recommended: Ec 201.

Ec 431/531**Urban Economics (4)**

Functions of the urban economy: the market sector and the public sector. Economic analysis of issues such as land use, environmental quality, transportation, housing, income distribution, and the organization and financing of urban

public services. Recommended: Ec 201, 202. This course is the same as USP 431/531; course may only be taken once for credit.

Ec 432/532

Environmental Economics (4)

An examination of the alternative and sometimes conflicting evaluation and decision-making criteria of economics and physical sciences as they pertain to the material environment. An evaluation of policy alternatives. Recommended: Ec 201, 202.

Ec 433/533

Natural Resource Economics (4)

An examination of the economic concepts and theories for analyzing natural resource use and related environmental pollution, including the economics of sustainability. Discussion of renewable and non-renewable natural resource issues in the Pacific Northwest and policy alternatives. Recommended: Ec 201.

Ec 434/534

Business Environmental Management Economics (4)

Examines the economic costs and benefits that affect the decisions of business firms to develop integrated environmental management systems. Analysis of policy options to foster business environmental management for public goods. Case studies of selected firms. Recommended: Ec 201.

Ec 435/535

Public Spending and Debt Policy (4)

Analysis of the role of the state in a competitive economy. Development of decision rules for state economic action. Includes a detailed study of the principles of voting, public budgeting including cost benefit analysis and PPBS, the theory of fiscal federalism and the theory and principles of public debts. Recommended: Ec 201, 202.

Ec 436/536

Taxation and Income Policies (4)

Principles and problems of government financing. Critical analysis of alternative taxes as sources of public revenue with emphasis on theories of incidence and economic effect. Recommended: Ec 201, 202.

Ec 437/537

Public Utility Economics (4)

Examines the rationale, economic principles, and institutions of historic economic regulation. Contemporary theory of the firm and microeconomic pricing are analyzed. Technological changes suggest that to achieve economic efficiency it may no longer be necessary or appropriate to subject energy and telecommunications firms to traditional utility regulation. There is academic enthusiasm for displacing economic regulation with competition. Deregulation and restructuring are explored with emphasis on contemporary issues in Oregon, the Pacific Northwest, and the nation. In particular, difficulties in transformation to the marketplace will be examined. Expert guest lecturers from the utility and regulatory communities will be scheduled, and contemporary scholarly literature will be reviewed. Recommended: Ec 201, 202.

Ec 440/540

International Trade Theory and Policy (4)

Theories of international trade. Analysis of the normative aspects of trade including the gains from trade and the effect of trade on economic welfare. Examination of international trade pol-

icy and issues of economic integration, economic growth, and current trade problems. Recommended: Ec 201, 202; Ec 376 recommended. Ec 340 and Ec 440 cannot both count toward a degree or major requirements.

Ec 441/541

International Monetary Theory and Policy (4)

Balance of payments theory including balance of payments accounting and foreign exchange market; theoretical models of fixed and flexible exchange rate systems using both Neoclassical and Keynesian approaches. Historical evolution of the international monetary system. Current international monetary policies and problems. Recommended: Ec 201, 202; Ec 375 recommended. Ec 340 and Ec 440 cannot both count toward a degree or major requirements.

Ec 442/542

The Multinational Enterprise in the World Economy (4)

The study of the multinational (transnational) enterprise as a form of direct foreign investment. Analysis of theories of direct investment; the impact of the multinational enterprise on the national and international economy and the relationship of such firms to the concept of the nation-state. Recommended: Ec 201, 202.

Ec 443/543

Global Environmental Economics (4)

An examination of economic forces and theories to understand the causes of global environmental problems and evaluate policy options. Primary emphasis is on developing countries and countries in transition, though linkages with developed countries also considered. Topics include poverty, population, economic development and the environment, global warming, biodiversity protection, sustainability, and pollution control.

***Ec 444/544**

Economics of Green Power (4)

The economic feasibility and rationale of producing electricity using several alternative environmentally friendly technologies. The economic and environmental costs and benefits of employing these technologies are identified and compared to the dominant technologies (coal, oil, hydropower). Alternative policies that provide incentives for the adoption of green technologies are examined. Recommended: Ec 201.

Ec 445/545

Comparative Economic Systems (4)

Introduces the evolutionary-institutional method of analysis, incorporating history, the legacy of ideas, and the dynamics of change over time. Using this method, we shall examine economic systems of Ancient Rome, Medieval Feudalism, the Laissez-Faire Market Economy, Fascist Command Economy, and others. Recommended: Ec 201, 202.

Ec 446/546

Institutional Economics (4)

Considers the contributions of seminal thinkers to what is regarded as an alternate or heterodox school in economic science. Contribution of Thorstein Veblen, John R. Commons, Wesley Mitchell, Simon Kuznets, Clarence Ayres, Gunnar Myrdal, and John Kenneth Galbraith, as well as more contemporary thinkers will be explored. Institutional theory will be compared

and contrasted with neoclassical economics, and shown as a viable theory posing a formidable challenge to the dominant paradigm of orthodoxy. Neo-institutionalist challenges will also be considered.

Ec 447/547

Economics of Transition (4)

Examines the formation of the Soviet-type economic system in the 1920s and 30s and its dissemination after World War II to Eastern Europe, China, and other selected countries. Emphasis is placed on the history of ideas and the historical setting which gave rise to the Soviet model. Includes the examination of the internal contradictions of the model, the "unwinding" of planned socialism, and the prospects for the move toward mixed market economies. Recommended: Ec 201, 202.

Ec 450/550

Third-World Economic Development (4)

Examines problems of post-colonial legacy: underdevelopment and persistent poverty. Rapid population growth, uneven development, capital flight, dual economy, brain drain. Industrialization strategies, foreign trade, education and human capital, population slowdown, microcredit institutions, role of women. Recommended prerequisites: Ec 201, 202.

***Ec 451/551**

Small Businesses in Developing Areas (4)

Examines role of small businesses in promoting economic development in low income areas in Asia, Latin America, and Africa. Entrepreneurship as motor of economic growth and social transformation. Appraisal of institutions as constraints and advantages. Consideration of complex political environments affecting small business. Survival strategies of entrepreneurs. Recommended: Ec 201, 202.

Ec 453/553

Theory of Economic Growth (4)

Introduction to the theory of economic growth. This course will emphasize the theoretical basis and the models developed to measure growth and change in modern industrial societies. Recommended: Ec 201, 202.

†Ec 456/556

American Economic History: the First Century (4)

The economic background of the War of Independence and the seeds of the Civil War. Industrialization, urbanization, and development of the frontier. Rise of big business and organized labor. Laissez-faire, federalism, and the gradual emergence of the national government in economic policy. Changes in foreign trade and in the international position of the U.S. Recommended: Ec 201, 202.

†Ec 457/557

American Economic History: the 20th Century (4)

Economic impact of U.S. involvement in World War I. Postwar structural changes. Waning of laissez-faire. Causes of the Great Depression. Economic policies of Hoover and Roosevelt administrations. The New Deal reforms. World War II and emergence of the administered system. Evolution of the mixed economy and growing role of the government. The industrial-military complex. Social imbalance. Recommended: Ec 201, 202.

† Also offered as Hst 438/538.

Ec 460/560**History of Economic Thought (4)**

Selections from the economic writings of various thinkers from antiquity through the Reformation. A survey of the work of the most important economic theorists of the 18th, 19th, and 20th centuries including Adam Smith, Ricardo, Marx, Marshall, Veblen, and Keynes. Readings include original writings and interpretations by later economists. Scholars will be studied in terms of their historical context and the contemporary relevance of the theories and policy recommendations. Recommended: Ec 201, 202.

Ec 465/565**Labor Economics and Industrial Relations (4)**

After a survey of the history of American labor market institutions including unions, this course investigates the big questions in labor economic theory including the sources of unemployment, wage determination, and the reasons demographic groups fare differently in the labor market. Also considered are appropriate policies for current developments in the labor market, such as increasing wage inequality, globalization, and the widespread use of new technologies. Recommended: Ec 201.

Ec 472/572**Time Series Analysis and Forecasts (4)**

Time series analysis, emphasizing model identification, estimation, and forecasting. Non-stationary time series analysis includes unit root and cointegration tests. Techniques of moving average, differencing, and autocorrelation adjustment are introduced. Diagnostic checking following the model evaluation provides the base model for forecasting. Recommended: Ec 370 for 472, 570 for 572.

Ec 480/580**Mathematical Economics (4)**

Mathematics for economists. Applications of differential calculus and matrix algebra to economics. Topics include consumer theory, production functions, and applied general equilibrium models. Recommended: Ec 201, 202.

Ec 485/585**Cost-benefit Analysis (4)**

Identification and estimation of direct and indirect inputs and outputs. Valuation of commodities and of factors. Present social value and time discounting. Uncertainty. Recommended: Ec 376.

Ec 486/586**Project Evaluation (4)**

Cost and benefit evaluation. Choice of projects. Case studies related to water resources, transportation, and industrial projects. Recommended: Ec 376.

Ec 487/587**Economic Planning (4)**

Aspects of the economic planning process including target setting, tests of feasibility, consistency, optimality, and plan implementation. Recommended: Ec 376.

Ec 503**Thesis (Credit to be arranged.)****Ec 522****Economics of Sustainability: Theory and Practice (4)**

Economic concepts and theories for analyzing sustainable development, including the emerging field of ecological economics. Roles and practices of the business, government and non-profit sectors in fostering sustainability.

Ec 570**Econometrics (4)**

Covers the theory and application of statistical regression, hypothesis testing, and simulation of econometric models. Emphases are placed on model construction and efficient use of economic data. Problems of multicollinearity, heteroscedasticity, autocorrelation, and distributed lags are discussed. Some familiarity with calculus, matrix algebra, and computer applications are assumed. Recommended: Ec 370.

Ec 571**Advanced Econometrics (4)**

Advanced econometrics topics including systems of linear equations, panel data, nonlinear models, nonparametric estimation and prediction, and applications in consumption and production models. Data resources available to the practicing economist will be covered. Recommended: Ec 570.

Ec 575**Advanced Macroeconomics (4)**

Theories of national income, employment and price levels with special emphasis on recent developments in analytical techniques and empirical findings. Recommended: Ec 375.

Ec 576**Advanced Microeconomics (4)**

Theory of consumer behavior and of the firm. Market and multimarket equilibrium and stability. Varieties of imperfect competition. Recommended: Ec 376.

Ec 583**Impact Assessment (4)**

Empirical techniques employed in measuring the impacts associated with land use change. Topics: goals achievement matrix approaches to impact assessment; trade-offs between community and regional welfare; distance and times in urban analysis; estimating the social profitability of land development; cost-benefit analysis applied to freeway location techniques for valuation of nonpriced resources; measuring municipal revenue and expenditure impacts; gravity models and transport demand estimation; economic base analysis for employment and population impact assessment; and estimating air and noise pollution associated with land development. Recommended: Ec 376.

Ec 590**Applications of Advanced Macroeconomic Theory (4)**

Coverage includes current topics of interest in macroeconomics. The focus is on the applications of neoclassical and Keynesian theories of macroeconomic theory to a variety of real world

problems. The various sub-disciplines of macroeconomics that may be covered include: financial economics, monetary economics, economic growth models, labor economics, public finance, international economics, and radical macroeconomic thought. Recommended: Ec 575.

Ec 591**Applications of Advanced Microeconomic Theory (4)**

Applies theories of consumer and producer behavior to a variety of real world problems. Different sub-disciplines of microeconomics will be covered, which may include two or three of the following: information economics, environmental economics, economics of regulation, industrial organization, law and economics, natural resource economics, labor economics, regional economics, urban economics, and the economics of contracting. For each sub-discipline covered, the most important economic model will be discussed and a review of major research studies and techniques will be undertaken. Recommended: Ec 576.

Ec 595**Applied Advanced Econometrics (4)**

Covers advanced topics related to methodological issues in econometrics, with emphases on computation, simulation, and non-linear methods in econometrics. Nonlinear econometric models including Box-Cox variable transformation, autoregressive time series analysis, and qualitative choice models. Simulation-based econometrics covers topics of Monte Carlo experiments and bootstrapping methods. Recommended: Ec 570, 571.

Ec 596, 597**Research Project I, II (4, 4)**

Intended for graduate students to complete the field project requirement. Course activities include: independent reading on researchable field-related topics; individual development of a research project, i.e., selection of a subject and plan of study; and periodic reporting of individual research projects progress. Recommended: Ec 595.

Ec 675*Advanced Macroeconomics II (4)**

Extended analysis of macroeconomic theory covering static, deterministic models through recent dynamic and stochastic macro modeling. Analytic tools in both theoretic and empirical models are illustrated in the study of inflation, unemployment, growth and government policy. Recommended: Ec 575.

Ec 676*Advanced Microeconomics II (4)**

Extended analysis of microeconomic theory covering individual and social choice issues. Selected topics of interest and significance include but are not limited to: rational choice behavior of consumers and producers, theory of the market, partial and general equilibrium analysis, welfare economics, and economics of inflation. Recommended: Ec 576.

English

405 Neuberger Hall
503-725-3521
www.english.pdx.edu/

B.A.—English
B.A., B.S.—General Studies: Arts and Letters

Minor in English
Minor in Film Studies
Minor in Writing
Secondary Education Program
M.A.
M.A.T.
M.A./M.S. in Writing

Undergraduate programs

The study of English has long been considered one of the best ways to obtain a liberal education. Courses are designed to develop students' critical capabilities, to deepen their understanding of diverse cultural issues, and to improve their abilities to analyze and produce complex texts. The department prepares its majors for careers in writing and teaching, as well as for a variety of professions in which high levels of literacy and critical thought are required.

Various concentrations in literature and writing allow students flexible ways to combine interests in the literary arts with personal and professional goals. Community-based learning courses encourage students to integrate their academic skills with experience in the metropolitan area. Indeed, the breadth of knowledge and the communication skills that English majors typically acquire make them attractive to many potential employers and prepare them for graduate work leading to professions such as law.

For those who wish to teach, the English Department prepares majors for graduate work leading to teaching certification or for entry into graduate master's or doctoral programs in English. PSU graduates in English have gone on to succeed in advanced degree programs at many major universities.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. In addition to meeting the general University degree requirements, the English major will meet the following requirements for the B. A. degree:

Lower-division courses	Credits
Two courses selected from the following:.....	8
Eng 201 Shakespeare	
Eng 202 Shakespeare	
Eng 204 Survey of English Literature	
Eng 205 Survey of English Literature	
Eng 253 Survey of American Literature	
Eng 254 Survey of American Literature	
Eng 256 Introduction to African American Literature	
Eng 260 Introduction to Women's Literature	
Wr 200 Writing about Literature	
Total lower-division credits	8†

Upper-division courses

Theory (Group A)

Eng 300.....	4
Elective in advanced criticism and practice.....	4
Eng 491, 492 Literary Criticism	
Eng 494 Topics in Critical Theory and Methods	

Literatures of Ethnicity, Gender, Class, and Culture (Group B)

Electives.....	8
Eng 305 Topics in Film	
Eng 308 Cultural Studies in Literature	
Eng 309 American Indian Literature	
Eng 310 Literature and the Environment	
Eng 351, 352, 353 African American Literature	
Eng 387 Women's Literature	
Eng 420 Caribbean Literature	
Eng 421, 422 African Fiction	
Eng 443, 444 British Women Writers	
Eng 445, 446 American Women Writers	
Eng 449 Advanced Topics in Cultural Studies	
Eng 467, 468 American Literature and Culture	

Period Studies in British and American Literature (Group C) (to include at least 8 credits at the 400 level)

Eng 301 Topics: Shakespeare	
Eng 311† Tragedy	
Eng 313 The American Short Story	
Eng 312† Comedy	
Eng 314† The Epic	
Eng 317† Greek Mythology	
Eng 318† Bible as Literature	
Eng 319† Northern European Myth	
Eng 320†, 321 The English Novel	
Eng 340† Medieval Literature	
Eng 341† Renaissance Literature	
Eng 342† Restoration and 18th Century Literature	
Eng 343† Romanticism	
Eng 344 Victorian Literature	
Eng 345 Modern British Literature	
Eng 360† American Literature to 1865	
Eng 363 American Literature 1865-1965	
Eng 364, 365, 366 American Fiction	
Eng 367 Topics: American Literature and Culture	
Eng 384, 385 Contemporary Literature	
Eng 411†, 412 English Drama	
Eng 426† Advance Topics in Medieval Literature	
Eng 430† Sixteenth Century Literature	

Eng 440† Advanced Topics in Seventeenth Century Literature	
Eng 441† Advanced Topics In Renaissance Culture	
Eng 450† Advanced Topics in Eighteenth Century Literature	
Eng 458† Advanced Topics in Romanticism	
Eng 460†, 461† American Literature: Beginnings to 1865	
Eng 464 American Literature: 1865-1955	
Eng 467, 468 American Literature and Culture	
Eng 475, 476 Advanced Topics in Victorian Literature	
Eng 477, 478 American Poetry	
Eng 480 Modern British Literature	
Eng 485 Contemporary Drama	
Eng 486 Contemporary American Novel	
Eng 487 Contemporary American Short Story	
Eng 488 Contemporary American Poetry	
Also see: Eng 306, 308, 405, 407, 447, 448, 410 for pre-1800's	

Writing, Rhetoric, Composition, and Linguistics (Group D)

One upper-division writing course.....	4
Elective.....	4
Eng 325 Grammar for Writers	
Eng 413 Teaching and Tutoring Writing	
Eng 414 Contemporary Composition Theories	
Eng 415 Research Methods in Composition	
Eng 425 Practical Grammar	
Eng 490 Rhetoric	
Eng (appropriate adviser-approved course offered under omnibus number)	
Ling 390 Introduction to Language	
Wr 312 Intermediate Fiction Writing	
Wr 313 Intermediate Poetry Writing	
Wr 319 Planning and Producing Publications	
Wr 323 Writing as Critical Inquiry	
Wr 324 Advanced Writing about Literature	
Wr 327 Technical Report Writing	
Wr 328 News Editing	
Wr 330 Desktop Publishing I	
Wr 333 Advanced Composition	
Wr 412 Advanced Fiction Writing	
Wr 413 Advanced Poetry Writing	
Wr 420 Writing: Process and Response	
Wr 425 Advanced Technical Writing	
Wr 427 Technical Editing	
Wr 428 Advanced News Writing	
Wr 430 Desktop Publishing II	
Wr 460 Introduction to Book Publishing	
Wr 461 Book Editing	
Wr 462 Book Design and Production	
Wr 463 Book Marketing and Promotion	
Wr 464 Bookselling	
Wr 470 Intellectual Property and Copyright	
Wr (appropriate adviser-approved, upper-division course)	

Electives (Group E)

Electives in theory, literature, writing, and rhetoric.‡ May include up to four adviser-approved, lower-division credits).....	16
Total upper-division credits	52
Total	60

English majors will be expected to choose their courses in consultation with their advisers. For upper-division coursework in the several groups, consult the following lists of acceptable courses:

† Adviser-approved lower and upper-division credits may be substituted for some or all of these lower-division credits.

‡ Indicates pre-1800 courses.

§ Courses to be selected from any upper-division English course (with the exception of Eng 474) or from any writing course listed under Group D.

Alternate courses. The following courses, depending on their content, may fulfill major requirements in Groups A, B, C, and D. Students should consult specific offerings each term and meet with their adviser to have them approved:

Eng 305 Topics in Film
 Eng 306 Topics in Literature and Popular Culture
 Eng 308 Cultural Studies in Literature
 Eng 399 Special Studies
 Eng 407 Seminar
 Eng 410 Special Topics
 Eng 447 Major Forces in Literature
 Eng 448 Major Figures in Literature
 Eng 449 Advanced Topics in Cultural Studies
 Eng 494 Topics in Critical Theory and Methods
 Wr 399 Special Studies
 Wr 410 Special Topics

- ◆ English majors in upper-division English courses are expected to be able to write a library research paper when required. The department recommends that majors without prior training in research paper writing enroll in Wr 222.
- ◆ Upperdivision credits may not include Wr 472 or Eng 474.
- ◆ Any course used to satisfy departmental major requirements, whether taken in the department or elsewhere, must be taken under the differentiated grading option and must have been assigned a grade of C or above.
- ◆ No more than 12 credits of coursework taken for the Professional Writing Minor may be applied to the English major.
- ◆ A minimum of 24 credits in English and/or writing at PSU is required.

Requirements for minor. To earn a minor in English a student must complete 28 adviser-approved credits (12 credits of which must be taken in residence at PSU).

- ◆ Twelve credits must be literature courses.
- ◆ Sixteen credits must be at the upper-division level.
- ◆ No more than 8 credits total and no more than 4 credits in each of the following may be applied to the English minor: Eng 199, 399, 401, 405, 408, 409, Wr 199, 399, and/or 405.
- ◆ With the exception of upperdivision creative writing courses, any course used to satisfy departmental minor requirements must be taken under the differentiated grading option and must have been assigned a grade of C or above. Upperdivision creative writing courses assigned a grade of pass may apply to the minor.

Note: The following courses will not count as part of the English minor: Wr 115 Introduction to College Writing; Wr 121 English Composition; Wr 211 Writing Practice; Wr 222 Writing Research Papers; and Wr 323 English Composition

Requirements for minor in writing. To earn a minor in writing, a student must complete 28 credits (12 credits of which must be taken in residence at PSU), to include the following:

Group I: Foundation courses Credits
 Three courses chosen from the following:12
 For creative:

Wr 212 Introduction to Fiction Writing
 Wr 213 Introduction to Poetry Writing
 Wr 312 Intermediate Fiction Writing
 Wr 313 Intermediate Poetry Writing
 Wr 412 Advanced Fiction Writing

For technical:

Wr 227 Introduction to Technical Writing
 Wr 327 Technical Report Writing
 Wr 427 Technical Editing

For nonfiction:

Wr 214 Beginning Nonfiction
 Wr 228 Introduction to News Writing
 Wr 328 News Editing
 Wr 428 Advanced News Writing

For book publishing:

Wr 460 Introduction to Book Publishing
 Wr 461 Book Editing
 Wr 462 Book Design and Production
 Wr 463 Book Marketing
 Wr 464 Bookselling

Group II: Electives

Four adviser-approved courses chosen from the following16

Eng 425 Practical Grammar
 Wr 330 Desktop Publishing I
 Wr 404 Internship and Cooperative Education
 Wr 410 Special Topics in Writing. Topics vary, including: Legal Writing, Writing for Presentations, Publications Project Management, Information Technology for Writers, Multimedia Production
 Wr 416 Screenwriting
 Wr 425 Advanced Technical Writing
 Wr 426 Document Design
 Wr 429 Writing Computer Documentation
 Wr 430 Desktop Publishing II
 One writing intensive course

Any adviser-approved, upper-division expository writing, creative writing, or technical/professional writing course.

One course from another department approved for inclusion in the technical/professional writing minor (see list in English Department)

Total 28

SECONDARY EDUCATION PROGRAM

Students who complete a major in English and wish to teach English in secondary schools must be accepted into the program in the Graduate School of Education and complete specific requirements in both English and education.

At the time of entering, the time of completing student teaching, and the time of completing the secondary teaching program, the student must hold a minimum 3.00 GPA in English and writing courses. Those who do not meet this GPA requirement may request that their adviser initiate proceedings for a special evaluation by the Department of English teacher education committee.

Students must consult with an English education adviser to learn the requirements for the initial teaching license.

Graduate programs in English

The Department of English offers graduate work leading to the Master of Arts and the Master of Arts in Teaching degrees.

Admission requirements

- ◆ Application deadline February 1.
- ◆ Applications received after this date may not be reviewed.
- ◆ Applicants will be asked to submit:
- ◆ Three letters of academic recommendation
- ◆ Statement of purpose of study
- ◆ Two recent samples of written work to include an analytical essay

Students accepted to the master's program normally hold the B.A. in English, with a minimum GPA of 3.25 in all English courses.

Applicants whose bachelor's degree is not in English may still be considered for admission if they have taken 20-30 credit hours in British and American literature and in writing (to include British and American literature survey courses, as well as upper-division coursework in literature and writing), with a 3.25 GPA, and submit an analytical essay from one of their literature courses.

Those who do not meet either of these requirements may be considered for *conditional* admission. They will need to provide satisfactory evidence of preparedness to undertake advanced work. In addition to the list above, they will need to submit:

- ◆ 3.25 GPA in four or five graduate English courses
- ◆ Explanation of undergraduate record and purpose of study
- ◆ Two samples of written work from recent English courses

Students whose native language is not English must score at least 600 on the TOEFL examination.

Degree requirements

University master's degree requirements are listed on page 70. Department requirements are described in detail in the Department of English brochure, M.A. in English, which is available upon request.

Master of Arts. For the M.A., the department requires a minimum of 32 graduate credits in English, including Eng 596 Problems and Methods of Literary Study, Eng 507 Seminar, and 8 credits of pre-1800 British or American literature. The remainder of the student's program may, with the approval of the adviser, include

coursework in fields related to English. A minimum of 45 graduate credits is required for the M.A. in English.

In every case, the student's program must be approved by the departmental adviser and the coordinator of graduate studies. The student will have a choice of three tracks:

- I. The three-area, non-thesis option, emphasizing general coverage of literary material.
- II. The thesis option, permitting more specialized research.
- III. The portfolio option, emphasizing reflection, revision, and scholarly writing.

Students pursuing option I must select for their final written examinations three areas chosen from the list below. One of these areas must be in British literature. Students who write theses also take a three-hour general examination testing their overall knowledge of English and American literature. The examination areas are as follows:

British Literature: Beginnings to 1500; 1500-1660 (excluding Milton); 1660-1780 (including all of Milton); 1780-1830 (Romantics); 1830-1910 (Victorian/Edwardian); 1910-present.

American Literature: 1607-1798 (Colonial/Puritan); 1798-1890 (19th Century); 1890-1940; 1940-present.

Other areas: Literary criticism; rhetoric and composition; women's literature; ethnic literatures; post-colonial literature; cultural studies; genre studies (poetry/drama/prose fiction); or, by petition, other special topics.

Successful completion of the written examination makes the student eligible for the final oral examination.

For students in the thesis option, the thesis defense will form part of this oral examination. Students in the three-areas (non-thesis) option must submit to their examination committee two substantial papers written in regular graduate coursework in English at PSU.

For more details regarding the portfolio option, please request the portfolio hand-out from the English department.

Master of Arts in Teaching

Admission Requirements: M.A.T.

To be considered for admission to graduate study, the student is expected to hold the B.A. degree in English or its equivalent with a minimum GPA of 3.00 in all undergraduate English coursework.

Following review of the academic record by the department, the student may be asked to give special demonstration of a capacity to pursue a graduate program in English. Before advancement to candidacy, the student is expected to fulfill the foreign language requirement.

Degree Requirements:

University M.A.T. degree requirements are listed on page 71. The department requires a minimum of 28 credits in English at the graduate level. The distribution of these credits is determined by the student in conference with the adviser. Eight of the credits will come from the following list: Eng 507, 517, 532, 533, 595, 596.

A written examination is required, based upon two areas in the disciplines and a third area in Curriculum and Instruction in the Graduate School of Education.

Successful completion of the written examination makes the candidate eligible for the final oral presentation. The student's program must present a minimum of 12 graduate credits in education. The student also submits to the department for its approval two substantial papers written in regular graduate coursework in English at PSU.

The M.A.T. is considered a terminal degree, but it does not allow one to teach at the secondary or middle level school in Oregon. An Initial Teaching License is needed, and it is earned through the Graduate Teacher Education Program (GTEP) at PSU. If the applicant already has a Basic Teaching License, he or she can apply the education credits to the standard license.

The student who seeks the standard license must present academic credit that will satisfy the PSU licensing program as well as the minimum state department norm for the field; the student must specifically determine with the aid of the adviser whether the program is satisfactory. Final approval of the program must be agreed upon by both the Department of English and the Graduate School of Education.

Graduate programs in writing

The Department of English offers graduate work leading to the Master of Arts in writing and the Master of Science in writing degrees.

Admission requirements

Students accepted into the master's program must provide satisfactory evidence of preparedness to undertake advanced work, to include a B.A. or B.S. degree from an accredited college or university and the following.

- ◆ Departmental application form.
- ◆ One transcript from each post-secondary institution attended.
- ◆ 3.25 GPA in undergraduate work.
- ◆ Three letters of recommendation.
- ◆ One-page personal introduction, including background as a writer, statement of goals, and proposed plan of study.
- ◆ Typed or word-processed manuscript(s) in the applicant's primary genre(s) or form(s). Previously published, single-authored work will be accepted in the form in which it was originally published.



In creative writing: 15 pages of poetry, 30 pages of fiction, double-spaced as in manuscript form. Manuscripts should demonstrate mastery of basic craft and unmistakable literary promise.

In nonfiction writing: 30 pages of news features, magazine articles, or creative nonfiction, double-spaced as in manuscript form. Manuscripts should demonstrate mastery of basic craft and promise of success in nonfiction writing.

In professional/technical writing: 15-30 pages from customary genres, including (but not limited to) descriptions, specifications, computer documentation, proposals, memoranda, formal reports, newsletters, on-line documentation, Web pages. Manuscripts should demonstrate mastery of basic craft and promise of success in professional/technical writing.

In book publishing: 15-30 pages of written work demonstrating promise of success in the publications industry. Genres are open. Work that has been previously published may be included in the published form (i.e., offprints, etc.)

While there is no conditional admission to this program, applications not fulfilling the requirements stated above may be reconsidered after the student has met certain conditions (e.g., additional preliminary coursework) as specified by the coordinator of graduate studies or his/her designee.

Degree requirements

University master's degree requirements are listed on page 70.

For the M.A. and the M.S., the department requires a minimum of 32 graduate credits in writing. The remainder of the student's program may, with the approval of the adviser, include coursework in fields related to writing. A minimum of 48 graduate credits is required for the M.A./M.S. in writing. The M.S. differs from the M.A. in that students completing the M.S. are not required to demonstrate proficiency in a language other than English. The M.S. option applies to the professional/technical strand.

In every case, the student's program must be approved by the departmental adviser and the coordinator of graduate studies or his/her designee. The student will have a choice of three tracks: I, creative writing; II, nonfiction writing; and III, professional/technical writing. For students pursuing tracks I and II, the thesis may count for a maximum of 8 credits upon proper registration.

Creative writing. Students typically will complete 24 core credits (6 courses), 16 elective credits (4 courses), and 8 thesis credits (2 courses). Core courses include workshops, craft-seminars, and literature courses in the Department of English. Writers are encouraged to supplement

their core courses in creative writing with electives from within professional/technical writing, nonfiction writing, or literature. Adviser-approved courses from outside the department may also count as electives. Credits taken while completing the creative thesis must be distributed over two or more terms. A creative thesis will be supervised by one of the creative writers in the department. After completing their workshops, students should draw up a thesis proposal in collaboration with one of these faculty members. The length of a creative thesis will depend upon its genre and format. The student will take final written and oral exams in defense of the creative writing thesis.

Nonfiction writing. Students typically will complete 24 core credits (6 courses), 16 elective credits (4 courses), and 8 thesis credits (2 courses). Core courses include workshops, craft-seminars, and literature courses in the Department of English. Writers are encouraged to supplement their core courses with electives from within creative writing, professional/technical writing, or literature. Adviser-approved courses from outside the department may also count as electives. Credits taken while completing the nonfiction thesis must be distributed over two or more terms. A nonfiction thesis will be supervised by one of the nonfiction writers in the department. After completing the workshops, a student should draw up a thesis proposal in collaboration with an appropriate faculty member who has expertise in the genre of the student's choice. The length of the thesis will depend upon its genre and format; with adviser approval, a student can substitute a series of shorter works in place of a book-length thesis. As with the creative writing emphasis, the student's work must be of publishable quality in a professional context. The student will take final written and oral exams in defense of the nonfiction thesis.

Professional and technical writing. Students typically will complete 16 core credits (4 courses), 16 elective credits (4 courses), and 16 credits (4 courses) in a specialization that may involve coursework in another discipline (e.g., Management, Marketing, Information Systems). Students will be required to submit a final project in addition to completing their coursework. This project typically will be a portfolio of their work demonstrating competence at a professional level, but with adviser approval, may be a single, substantive work. The student will take final written and oral exams in defense of the final project. Note that core courses include Management 550, Organizational Management, which is offered through the School of Business Administration. Electives include seminars and workshops on a variety of topics. Writers are encouraged to supplement their core courses in creative writing with electives from creative

writing, nonfiction writing, or literature. Adviser-approved courses from outside the department may also count as electives.

Book publishing. Students typically will complete 20 core credits (5 courses), 16 elective credits (4 courses) in writing, and 12 elective credits (3 courses) that may involve coursework in another discipline. The final project will be in addition to completing the coursework and will typically be a portfolio of work demonstrating competence at a professional level, but with adviser approval, may be a single, substantive work. The student will take final written and oral exams in defense of the final project. Work included in a portfolio will reflect assignments made in a particular course and appropriate to it, i.e., samples of editorial work, query letters for fiction and nonfiction books, book marketing plans, book design proposals, research and writing on issues in contemporary American publishing.

Courses

Courses with an asterisk () are not offered every year.*

***Eng 100 Introduction to Literature (4)**

Introduction to the study of short stories, plays, poems, and essays. Includes representative approaches for studying literature and writing about it. Recommended especially for students with no previous college-level coursework in literature. Credit for Eng 100 will not be allowed if student has previously taken more than one literature course. No prerequisites.

Eng 104 Introduction to Fiction (4)

Reading, analysis, and appreciation of significant works of fiction, especially short stories, with emphasis on the fiction writer's craft.

Eng 105 Introduction to Drama (4)

Reading, analysis, and appreciation of significant works of drama, from classical times to the present.

Eng 106 Introduction to Poetry (4)

Reading, analysis, and appreciation of significant poems, how they are written and how they speak to human concerns.

***Eng 107, 108 World Literature (4, 4)**

Narrative prose, drama, and poetry. Complete books are included so that the student may become familiar with some of the masterpieces in world literature.

Eng 199 Special Studies (Credit to be arranged.)

Eng 201, 202 Shakespeare (4, 4)

Study of the important plays: Eng 201, the early plays; Eng 202, the later plays.

Eng 204, 205 Survey of English Literature (4, 4)

From Beowulf to 1900: Eng 204, Beowulf to Milton; Eng 205, Enlightenment through Victorian period.

Eng 253, 254**Survey of American Literature (4, 4)**

American literature from its beginnings to the present.

Eng 256*Introduction to African American Literature (4)**

An overview of African American fiction, poetry, drama and expository prose.

Eng 260*Introduction to Women's Literature (4)**

Introduction to the texts and contexts of women's literature.

Eng 300**Critical Approaches to Literature (4)**

Study of analytical and evaluative methods through application of critical theories to literary works. Recommended for, but not restricted to, English majors. Recommended prerequisite: upper-division standing and 8 credits in literature.

Eng 301**Topics: Shakespeare (4)**

Study of Shakespeare's works focusing on topics such as genre (tragedy, comedy, etc.), period (Elizabethan/Jacobean) or cultural context. Some familiarity with Shakespeare and/or the Renaissance is expected. Course may be repeated for credit with different topics.

Eng 304**Critical Theory of Cinema (4)**

Outlines the central elements of cinema criticism, including interpretive theories and approaches. Begins with an outline of critical approaches, including critical history. Moves to contemporary criticism, including feminist, structuralist, sociological, and psychoanalytic analyses. Includes discussion of film as a cultural commodity.

Eng 305**Topics in Film (4)**

Study of film as text, including genre, auteur, formalist, historical, and cultural perspectives. Topics may include: film noir, the western, famous directors, and critical approaches to cinema.

Eng 306**Topics in Literature and Popular Culture (4)**

Study of a variety of expressive forms in relation to popular culture. Such topics as Detective Fiction, Film, American Humor, and Frontier Literature.

Eng 307*Science Fiction (4)**

Study of recent science fiction, both novels and shorter fiction by American, European and other writers.

Eng 308**Cultural Studies in Literature (4)**

Study of a variety of cultural and historical issues as they appear in literary texts. Such topics as Literature of the Holocaust, the Literature of Aging, and the Immigrant Experiences in American Literature.

Eng 309**American Indian Literature (4)**

An introductory survey of traditional and recent literature by American Indian people. Poetry,

legends, myths, oratory, short stories, and novels, as well as background (historical and political) materials.

Eng 310**Literature and the Environment (4)**

A survey of literature treating nature, the environment, and issues such as eco-feminism, biocentrism, and Native American spirituality.

Eng 311**Tragedy (4)**

A study of the nature of tragedy in world literature.

Eng 312**Comedy and Satire (4)**

Study of drama and other literature that expresses comic social judgment, either to satirize or to celebrate.

Eng 313**The American Short Story (4)**

A survey of the American short story, from its beginnings in the 19th century to the present.

Eng 314*The Epic (4)**

Reading in epic literature in the Western tradition and world literature, beginning with the Iliad and Odyssey.

Eng 315**The Shorter Poem (4)**

Shorter poems in world literature. Primary attention will be given to poems in the English language, but the classics of other languages will be read in translation as appropriate to tracing of forms and themes.

Eng 316**The Short Story (4)**

A survey of the short story as it developed from the tale, the legend, and the anecdote to its modern form. Although fiction from many literatures will be studied, all works will be read in English.

Eng 317**Greek Mythology (4)**

Greek mythology as recorded by Homer, Hesiod, Ovid, and various of the Greek playwrights and philosophers. Special attention is given to the Greek legacy of ideas, themes, figures, and images.

Eng 318**The Bible As Literature (4)**

A study of the various kinds of literature contained in the Bible. An analysis of the ways in which the Biblical expression reflects the cultural and historical milieu of the Hebraic-Christian experience.

Eng 319*Northern European Mythology (4)**

A study of Nordic (Germanic) and Celtic myths, their literary development, and fusion with Christian themes in Arthurian romance and Beowulf.

Eng 320, 321**English Novel (4, 4)**

The English novel, from its beginnings to the present.

Eng 340**Medieval Literature**

Selected works of medieval literature; introduction to the themes, genres, history, and cultures of the Middle Ages.

Eng 341**Renaissance Literature (4)**

Selected works of sixteenth- and early seventeenth-century literature (c. 1500-1660); introduction to the themes, genres, history and cultures of the Renaissance.

Eng 342**Restoration and Eighteenth Century Literature (4)**

Selected works from the long eighteenth century (1660-1800); introduction to themes, genres, history and culture of the eighteenth century.

Eng 343**Romanticism (4)**

Selected works of Romantic literature; introduction to themes, genres, history, and culture of Romanticism.

Eng 344**Victorian Literature (4)**

Selected works of Victorian literature; introduction to themes, genres, history and culture of the Victorian Era.

Eng 345**Modern British Literature (4)**

Selected works of twentieth-century British literature; introduction to themes, genres, history, and culture of modernism.

Eng 351, 352, 353*African American Literature (4, 4, 4)**

A study of African American literature from its oral and folk beginnings to the present. Prerequisites: Eng 256 or BSt 221 and upper-division standing.

Eng 360**American Literature to 1865 (4)**

Overview of genres, themes, and styles in the literatures of Early America and of the Early Republic.

Eng 363**American Literature 1865-1965 (4)**

Historical study of selected figures and movements in American literature from 1865 to 1965.

Eng 364, 365, 366**American Fiction (4, 4, 4)**

American narrative, short story, and novel, with emphasis upon the major novelists of the 19th and early 20th centuries.

Eng 367**American Literature and Culture (4)**

Studies of various American literatures within the context of American history and culture from colonial period to the present. Topics: Slavery & Captivity Narratives, Sermons and Histories, Boarding School Stories, Pacific Northwest Literature, American Folklore, Diaries and Journals. May be repeated with different topics: maximum of 8 hours. Prerequisite: 12 credits in literature.

Eng 371**The Novel (4)**

The novel as a literary form, exemplified by works written in languages other than English.

Eng 384, 385**Contemporary Literature (4, 4)**

Prose, poetry, and drama from contemporary world literatures.

Eng 387**Women's Literature (4)**

A close study of writing by women from the medieval period to the present including poetry, drama, fiction and non-fiction.

Eng 399**Special Studies (Credit to be arranged.)****Eng 401/501****Research (Credit to be arranged.)****Eng 404/504****Cooperative Education/Internship (Credit to be arranged.)****Eng 405/505****Reading and Conference (Credit to be arranged.)**

Consent of instructor.

Eng 407**Seminar (Credit to be arranged.)**

Consent of instructor.

Eng 408/508**Workshop (Credit to be arranged.)****Eng 409/509****Practicum (Credit to be arranged.)****Eng 410/510****Selected Topics (Credit to be arranged.)*****Eng 411/511, 412/512****English Drama (4, 4)**

Development of English drama from the beginnings to Shaw. Eng 411/511, from liturgical drama through the Renaissance; Eng 412/512, from the Restoration to Shaw. Recommended: 12 credits in literature.

Eng 413/513**Teaching and Tutoring Writing (4)**

Examines current practices of tutoring and teaching writing in all subject areas. Focuses on the process theory of writing to foster thinking and learning in subject areas and the problems and issues surrounding individual composing. Recommended: at least junior standing.

Eng 414/514**Contemporary Composition Theories (4)**

Examines theories of composition as they conflict and converge to form our prevailing theories of writing. Focuses on contemporary theories of composing written discourse. Recommended: at least senior standing.

Eng 415/515*Research Methods in Composition (4)**

Examines current methodologies used in the field of composition and asks students to design and implement a research project which will add to the cumulative knowledge of the discipline. It serves as the foundation course in design and implementation of qualitative research. Recommended: at least senior standing.

Eng 420/520*Caribbean Literature (4)**

A selection of poetry and fiction from the English and French speaking Caribbean (in translation where necessary). Recommended: One previous African American literature course and 12 additional literature credits.

Eng 421/521, 422/522*African Fiction (4, 4)**

Readings in African fiction in regional, cultural, generational, and gender contexts. Recommended prerequisites: One previous African American literature course and 12 additional literature credits.

Eng 425/525**Practical Grammar (4)**

Designed to enable students to understand, and therefore consciously to make effective, the structures of their written sentences. The course examines grammatical categories, structures, and terminology; relationships between grammatical structures and punctuation; and prescriptive grammars for written texts. Recommended: successful completion of 12 credits of English or writing.

Eng 426/526**Advanced Topics in Medieval Literature (4)**

Specialized studies in Medieval English literature (c. 800-1500). Topics courses are designed to follow a two-quarter sequence: (1) Anglo-Saxon works, and the exegetical reading model; some later Middle English and continental vernacular and Latin medieval works are included and (2) later medieval works (1200-1500), focusing primarily on the Middle English vernacular tradition. Students will have some opportunity to learn to read Old and Middle English. Prerequisite: 12 credits in literature.

Eng 430/530**Sixteenth Century Literature (4)**

Specialized studies in Renaissance English literature. Topics include individual writers and literary groups; sixteenth-century poetry and prose; the English sonnet; the Renaissance epic and pastoral traditions; Elizabethan drama, verse narrative, satire, and invective; humanism; the rise of the professional writer; literature and the visual arts. Prerequisite: 12 credits in literature.

Eng 440/540**Advanced Topics in Seventeenth Century Literature (4)**

Specialized studies in seventeenth-century literature. Topics include cavalier and metaphysical poetry; revenge tragedy; prose forms of the early seventeenth century; popular genres of the English civil war; women writers; and restoration drama. Prerequisite: 12 credits in literature.

Eng 441/541**Advanced Topics in Renaissance Culture (4)**

Advanced topics in early modern (1500-1700) cultural studies, focusing on issues of religion, social class, ethnicity, gender, and sexuality and studying both literary and non-literary texts. Prerequisite: 12 credits in literature.

Eng 443/543, 444/544*British Women Writers (4, 4)**

Study of the works of British women writers with attention to themes, styles, and characteristic concerns in the light of feminist criticism and scholarship. Recommended prerequisite: 12 credits in literature. Eng 260 recommended.

Eng 445/545**American Women Writers: 19th Century (4)**

Study of American women writers, with attention to themes, styles, and characteristic concerns, in the light of feminist criticism and scholarship. Recommended prerequisite: 12 credits in literature. Eng 260 recommended.

Eng 446/546**American Women Writers: 20th Century (4)**

Study of American women writers, with attention to themes, styles, and characteristic concerns, in the light of feminist criticism and

scholarship. Recommended prerequisite: 12 credits in literature. Eng 260 recommended.

Eng 447/547**Major Forces in Literature (4)**

A study of literary forms, theories, and movements: i.e., The Comic Novel, Literature and Theology, Southern American Women Writers. Recommended prerequisite: 12 credits in literature.

Eng 448/548**Major Figures in Literature (4)**

Concentrated study of the canon of one or more major writers: for example, Chaucer, The Brontes, James Joyce, Hemingway and Fitzgerald. Recommended prerequisite: 12 credits in literature.

Eng 449/549**Advanced Topics in Cultural Studies (4)**

Interdisciplinary study of modern culture and media. The courses offered under this number use a range of theoretical approaches to analyze the role of cultural texts, their production and reception. Specific topics include: Major Figures/Concepts in Social Theory; Politics of Consumer Culture; Globalization and American Culture; and Culture, Gender, Race, Sexuality. Recommended for graduate students and undergraduates with at least junior standing. May be repeated with different topics; maximum of 8 hours may be applied to the master's degree.

Eng 450/550**Advanced Topics in Eighteenth Century Literature (4)**

Specialized studies in British poetry and prose from 1660-1800. Topics include survey of eighteenth-century literature; individual writers and literary groups; prose and verse satire; epistolary fiction; drama. Prerequisite: 12 credits in literature.

Eng 458/558**Advanced Topics in Romanticism (4)**

Specialized studies in literature of the Romantic movement in Britain and continental Europe. Topics include individual writers and literary groups; poetry and poetic theory; gothic fiction; romanticism and the novel; autobiographical and confessional literature; aesthetic ideologies; women and romanticism; revolutionary and imperialist aspects of romanticism; the impact of romanticism on later literary movements (such as symbolism and modernism). Prerequisite: 12 credits in literature.

Eng 460/560**Topics: American Literature to 1800 (4, 4)**

Advanced historical study of major figures and movements in American literature to 1865. Recommended prerequisite: 12 credits in literature.

Eng 461/561**Topics: American Literature to 1900 (4)**

Study of themes, genres, history, and culture in 19th century American literature. Topics: sentimental literature, immigrant literature, post-Civil War literature, imperial adventures, minority literatures in 19th century American literature. For offerings for a particular term, consult the University schedule, the English Department website and/or an adviser. May be repeated with different topics; maximum of 8 hours to be applied to master's degree. Prerequisite: 12 credits in literature.

Eng 464/564**American Literature: 20th Century (4)**

Study of themes, genres, history, and culture in 20th century American literature: Topics: Cold War literature, the 1930's, new immigrant fiction, literature of exile, suburban representations. For offerings for a particular term, consult the University schedule, the English Department website and/or an adviser. May be repeated with different topics: maximum of 8 hours to be applied to master's degree. Prerequisite: 12 credits in literature.

Eng 467/567**Advanced Topics: American Literature and Culture (4)**

Interdisciplinary thematic studies of American literature and culture. Topics: America in love and war, slavery, literature of the West, Northwest writers and culture. For offerings for a particular term, consult the University schedule, the English Department website and/or an adviser. May be repeated with different topics: maximum of 8 credits to be applied to master's degree. Prerequisite: 12 credits in literature.

Eng 469/569**Asian-American Literature and Culture (4)**

Readings in Asian-American literature and culture in generational, national, international, and gendered contexts. Topics will include gender and sexuality in Asian-American literature and film; transnational Asian-American narrative; Asian North American literature.

Eng 474/574**Teaching High School Literature (4)**

Emphasizes methods and materials for the teacher of literature. Recommended prerequisite: admission to the School of Education. May not be used to satisfy any requirements for the B.A. or M.A. in English.

Eng 475/575**Advanced Topics in Victorian Literature (4)**

Specialized studies of Victorian literature in the context of the history, ideas, and culture of the period. Topics include individual writers and literary movements such as Dickens; pre-Raphaelitism; literature of the industrial period. Prerequisite: 12 credits in literature.

Eng 477/577, 478/578**American Poetry (4, 4)**

Tradition and innovation in American poetry from the beginnings to the mid-20th century. Recommended prerequisite: 12 credits in literature.

Eng 480/580**Advanced Topics in Twentieth Century British Literature (4)**

Specialized studies in twentieth-century British literature. Topics include individual writers and literary groups; poetry, prose, and fiction; theories of modernism; technology, politics, propaganda, and the arts; literature and twentieth-century philosophy. Prerequisite: 12 credits in literature.

Eng 484/584*Modern Drama (4)**

Examines major European, English, and American plays in the period 1880-1940. Recommended prerequisite: 12 credits in literature.

Eng 485/585*Contemporary Drama (4)**

Examines major developments in world drama since World War II. Recommended: 12 credits in literature.

Eng 486/586**Contemporary American Novel (4)**

American novel since 1965, with emphasis upon traditions, themes and trends. Recommended: 12 credits in literature.

Eng 487/587**Contemporary American Short Story (4)**

The American short story from mid-20th century to the present. Recommended: 12 credits in literature.

Eng 488/588**Contemporary American Poetry (4)**

Study of significant trends in contemporary American poetry and poetics. Recommended: 12 credits in literature.

Eng 490/590**Rhetoric (4)**

An examination of classical and modern traditions in rhetoric with attention to central concepts and perspectives on writing. Prerequisites: 12 credits in English, philosophy, speech, and/or writing.

Eng 491/591, 492/592**Literary Criticism (4, 4)**

Study of the history, principles, and practice of literary criticism from Plato into the 20th century. Recommended: 12 credits in literature.

Eng 493/593**Advanced Topics in Feminist Literary Theory (4)**

Provides in-depth study of specific critical schools within the larger arena of feminist theory. Possible topics will include post colonialism and feminism; feminism and the body; historical perspectives on feminism. Prerequisite: 12 credits in literature or literary theory.

Eng 494/594**Topics in Critical Theory and Methods (4)**

A course in critical theories and techniques, to complement offerings in literary history and textual analysis. This course will focus on the critical or methodological topic selected by the instructor. Recommended for advanced students in literature and theory. Recommended: 12 credits in literature.

Eng 503**Thesis (Credit to be arranged.)****Eng 507****Seminar (Credit to be arranged.)**

Variable topics. Graduate only or consent of instructor. At least one Eng 507 seminar is required of M.A. candidates in English.

Eng 517*Middle English (4)**

Introduction to Middle English language through study of (largely non-Chaucerian) 12th to 15th century literature in the original. Graduate only or consent of instructor.

Eng 518**College Composition Teaching (2)**

Introduces and develops the theoretical and practical expertise of the graduate teaching assistant in the area of college composition teaching. Recommended prerequisite: appointment to teaching assistantship in English Department.

Eng 532, 533, 534*Old English (4, 4, 4)**

532: An introduction to the history and grammar of Old English. 533: Old English translation, poetry, and prose. 534: Special attention to Beowulf in Old English. Recommended prerequisite: Eng 532 is prerequisite for Eng 533 or 534. Graduate only or consent of instructor.

Eng 595**Contemporary Critical Theory (4)**

Literary criticism in theory and practice in the 20th century. Graduate only or consent of instructor.

Eng 596**Problems and Methods of Literary Study (5)**

Bibliography and the methods of literary study as an introduction to graduate work: three hours lecture and at least two additional hours of library research. Required for M.A. candidates in English.

Writing

Wr 115**Introduction to College Writing (4)**

A writing course for first-year students to help prepare them for Freshman Inquiry or Wr 121. Introduces college-level writing and reading, along with general study skills. Provides practice at formal and informal writing, responding to a variety of readings, learning textual conventions, and building confidence.

Wr 121**College Writing (4)**

A writing course for lower-division students, in which they develop critical thinking abilities by reading and writing, increase their rhetorical strategies, practice writing processes, and learn textual conventions. Includes formal and informal writing, responding to a variety of readings, sharing writing with other students, and revising individual pieces for a final portfolio of work.

Wr 199**Special Studies (Credit to be arranged.)**

May be repeated for a maximum of 12 credits.

Wr 200**Writing About Literature (4)**

Introduction to various approaches for writing about literature. Focuses on ways of responding to literature, ways of explicating literature, ways of analyzing literature through writing, and ways of integrating formal research into a written analysis of literature. Special attention will be paid to the writing process, including multiple drafting and revision.

Wr 211*Writing Practice (4)**

Writing Practice is a writing elective. Students proceed at their own pace through an individualized writing program that emphasizes the writing process and revision. Class time is spent writing and in conference. Recommended: Wr 121 or Freshman Inquiry.

Wr 212**Introductory Fiction Writing (4)**

Introduces the beginning fiction writer to basic techniques of developing character, point of view, plot, and story idea in fiction. Includes discussion of student work. Recommended: Freshman Inquiry.

Wr 213
Introductory Poetry Writing (4)

Introduces the beginning writer of poetry to basic techniques for developing a sense of language, meter, sound, imagery, and structure. Includes discussion of professional examples and student work. Recommended: Freshman Inquiry.

Wr 222
Writing Research Papers (4)

An elective course. The techniques for compiling and writing research papers. Attention to available reference materials, use of library, taking notes, critical evaluation of evidence, and conventions for documenting academic papers. Practice in organizing and writing a long expository essay based on use of library resources. Recommended: Wr 121 or Freshman Inquiry. May not be used to fulfill English major requirements.

Wr 227
Introductory Technical Writing (4)

Practical experience in forms of technical communication, emphasizing basic organization and presentation of technical information. Focuses on strategies for analyzing the audience and its information needs. Recommended: Wr 121 or Freshman Inquiry.

Wr 228
News Writing (4)

An introductory course in news reporting and writing. Focus on identifying newsworthiness, writing leads, constructing news stories, interviewing, and attributing quotes. Students learn to gather local news, writing some stories in a computer lab on deadline. Recommended: Wr 121 or Freshman Inquiry.

Wr 300
Topics in Rhetoric and Composition Practice (4)

Study of a variety of issues in the practice of rhetoric and composition. Includes such topics as writing and critical reasoning, visual rhetoric, and writing in the disciplines. May be repeated for credit.

Wr 312
Intermediate Fiction Writing (4)

Continues the study of fictional techniques introduced in Wr 212. Includes such advanced instruction as variations on the classic plot, complex points of view, conventions of genre, and development of ideas for future use. Emphasizes discussion of student work. Recommended: B or above in Wr 212. May be repeated once for credit. Consent of instructor required.

Wr 313
Intermediate Poetry Writing (4)

Continues the study of poetry writing techniques introduced in Wr 213. Includes additional instruction in poetic forms, variations on traditional forms, and experimental forms. Emphasizes discussion of student work. Recommended: B or above in Wr 213. May be repeated once for credit. Consent of instructor required.

Wr 323
Writing as Critical Inquiry (4)

A writing course for upper-division students, which offers sophisticated approaches to writing and reading. Students enhance critical thinking abilities by reading and writing challenging material, refine their rhetorical strate-

gies, practice writing processes with special attention to revision and style, and write and read in a variety of genres. Includes formal and informal writing, sharing writing with other students, and preparing a final portfolio of work. Recommended: satisfactory completion of Wr 121 or Freshman Inquiry.

Wr 324
Advanced Writing About Literature (4)

Covers advanced issues in reading and interpreting literary texts, applied critical approaches, and the conventions of writing about literature, including documentation. Emphasizes writing and research processes, includes peer workshops. Prerequisite: upper-division standing.

Wr 327
Technical Report Writing (4)

Strategies for presenting technical information from the technician, management, and lay person's perspectives; rhetorical theory and techniques for adapting technical prose to nontechnical audiences; and techniques for emphasizing and de-emphasizing information. Recommended: Wr 323.

Wr 328
News Editing (4)

Preparation of news and feature stories for publication. Emphasis is on line editing, copy editing, editorial troubleshooting, headline writing, and layout. Prerequisites: Wr 228.

***Wr 329**
Planning and Producing Publications (4)

Managing the publishing needs of businesses, governmental agencies, and nonprofit institutions. Includes choosing technologies, budgeting, selecting materials, scheduling, and distribution. Recommended: Wr 327.

Wr 330
Desktop Publishing I (4)

Integrates writing, design, and visual communication with computer technology, with emphasis on preparing students to produce a variety of shorter products combining writing and design elements.

Wr 333
Advanced Composition (4)

Essay writing with particular attention to student's area of specialization. Advanced practice in essay writing. Recommended: Freshman Inquiry or two writing courses.

Wr 394
Writing Careers for English Majors (4)

A community based learning course for English majors who want to use their English major to shape a viable career. Students hold an internship/serve the community and practice public relations/other professional writing. Prerequisite: upper-division standing.

Wr 399
Special Studies (Credit to be arranged.)

Wr 404/504
Cooperative Education/Internship (Credit to be arranged.)

Wr 405/505
Writing and Conference (Credit to be arranged.) Consent of instructor.

Wr 407/507
Writing Seminar (Credit to be arranged.)
 Consent of instructor.

Wr 410/510
Selected Topics in Writing (Credit to be arranged.)

Wr 412/512
Advanced Fiction Writing (4)

Further refines technical skills by demanding longer and more ambitious works of fiction by the advanced writer. Students will have an opportunity to do research and can expect to confront a variety of technical problems emerging from class discussion. Recommended: Wr 312. Consent of instructor required.

Wr 413
Advanced Poetry Writing (4)

Further refines technical skills by demanding more ambitious works of poetry by the advanced writer. Students will have an opportunity to do research and can expect to confront a variety of technical problems emerging from class discussion. The exploration of various techniques, schools, and poetic voices will be encouraged. Recommended: Wr 313. Consent of instructor required.

Wr 416/516
Screenwriting (4)

Students will be introduced to the process of conceiving, structuring, writing, rewriting, and marketing a screenplay for the contemporary American marketplace. "Screenplay paradigms" will be discussed, and a variety of movies will be analyzed. May be repeated for credit.

Wr 420/520
Writing Process and Response (4)

Provides opportunities for students to write in various genres. Includes language attitudes, writing process, and reader response. Recommended: one upper-division writing course. May be repeated for a maximum of 8 credits.

Wr 425/525
Advanced Technical Writing (4)

Emphasis on a problem-solving approach to adapting technical documents to audiences and organizations. The course includes strategies of organization for complex technical documents, such as proposals and professional articles; strategies for discussing tables and figures; and the use of metaphor to communicate technical information to lay audiences. Recommended: Wr 327. May be repeated for a maximum of 8 credits.

***Wr 426/526**
Document Design (4)

Document planning, creation, and revision, including discussion of the use and abuse of language in business, government, insurance, and law. Students will consider general strategies for document production; analyze different document styles; address questions of target audience; evaluate documents for readability and efficiency; and study the Plain English Movement and its legislative and legal implications.

Wr 427/527
Technical Editing (4)

Gives technical writers practice in technical editing by exposing them to samples of a variety of documents from the files of organizations in the surrounding community. As a community-based learning course, it requires students to interact with community partners in collabora-

tive student teams. May be repeated for a maximum of 8 credits.

Wr 428/528

Advanced News Writing (4)

Building on the journalism skills learned in News Writing and News Editing, students use the city of Portland as their laboratory, covering and writing breaking stories from community information sources like the police, courts, and city council. Students are also introduced to reporting on a regular basis from news beats of their choosing. Recommended: Wr 328.

***Wr 429/529**

Writing Computer Documentation (4)

Develop skills in writing computer documentation, primarily user manuals and system specifications. Focuses on analyzing informational needs of the audience, and defining and explaining computer terms and concepts for non-technical and semi-technical audiences. Recommended: Wr 327, ISQA 111 or CS 105 or equivalent, word processing skills.

Wr 430/530

Desktop Publishing II (4)

Builds from the foundation in Desktop Publishing I to explore further the skills needed to produce publications in the computer age. Topics include typography, page layout, photography, and informational graphics, with a special emphasis on hands-on project production of a 12-page newsletter or magazine.

Wr 460/560

Introduction to Book Publishing (4)

Provides a detailed overview of the publishing process, organized around the division of labor, including introductions to contemporary American publishing, issues of intellectual commerce, copyright law, publishing contracts, book editing, book design and production, book marketings and distribution, and book-selling. Based on work in mock publishing companies, students prepare portfolios of written documents, i.e., book proposals, editorial guidelines, design and production standards, and marketing plans. Guest speakers from the publishing industry and field trips provide exposure to the industry. Prerequisite: Wr 323.

Wr 461/561

Book Editing (4)

Provides a comprehensive course in professional book editing, including editorial management, acquisitions editing, substantive/developmental editing, and copyediting. Issues specific to both fiction and nonfiction books will be covered. Prerequisite: Wr 323.

Wr 462/562

Book Design and Production (4)

Comprehensive course in professional book design and production. Issues specific to the design of fiction and nonfiction books in a variety of genres and markets will be covered, including the applications of both old and new technologies in design and production. Prerequisite: Wr 323.

Wr 463/563

Book Marketing and Promotion (4)

Comprehensive course in professional book marketing and promotion. Issues specific to the promotion of fiction and nonfiction books in a variety of genres and markets will be covered. Students will do market research, interview authors, produce marketing plans, write press releases, write advertising copy, and develop related marketing materials for actual books in progress at the teaching press. Prerequisite: Wr 323.

Wr 464/564

Bookselling (4)

Comprehensive course in professional book-selling. Issues specific to the wholesale and retail sale of books in a variety of genres and markets will be covered. Changes in the industry and their impact on literary culture will be addressed. Students learn how bookstores, book wholesalers, and book distributors are organized and function in the marketplace. The nature of the book as both intellectual artifact and commodity will be discussed, with special emphasis on the impact of new delivery technologies. Prerequisite: Wr 323.

Wr 470/570

Intellectual Property and Copyright (4)

Outlines the opportunities and pitfalls faced by the writer (or editor, graphic designer, or artist) in the legal and ethical spheres. Copyright law, U.S. First Amendment law, defamation, right of privacy, trademark, and trade secret law. Will discuss the importance of the Internet in rethinking many copyright and intellectual property rules.

Wr 472/572

Teaching High School Composition (4)

Emphasizes methods and materials for the teacher of writing. Recommended prerequisite: admission to the School of Education. May not be used to satisfy any requirement for the B.A. or M.A. in English.

Wr 513

Fiction Writing (4)

An intensive course for writers who are currently embarked on a project involving the writing of fiction, whether short story, novella, or novel. Recommended prerequisites: Wr 212, 312, 412 or their equivalents. Consent of instructor required.

Wr 514

Poetry Writing (4)

Traditional workshop format in which students write, revise, and respond to the poems of others. May be repeated for credit.

Wr 515

Poetry Writing II (4)

Advanced poetry writing at the graduate level. Builds on Wr 514, assumes students will submit their work for publication. Traditional workshop format in which students write, revise, and respond to the poems of others. May be repeated for credit. Recommended prerequisite: Wr 514.

Wr 552

Writing About Lives (4)

Examines theories, methodologies, and issues of composing personal narrative throughout the life span. Forms may include: biography, autobiography, memoir, the personal essay, and the recording and transcribing of oral narrative. Following an introduction to appropriate theories and methodologies, the course focuses on writing and response to the chosen form in a workshop atmosphere. May be repeated for credit.

Wr 553

Writing About Places (4)

Examines theories, methodologies, and issues involved with writing about place. Topics include strategies for writing about place ranging from travel writing to nature writing, from traditional journalistic approaches to creative nonfiction. Following an introduction to appropriate theories and methodologies and examination of professional models, this course centers on writing and response to the chosen form in a workshop atmosphere. May be repeated for credit.

Wr 554

Writing About Events (4)

Examines theories, methodologies, and issues involved with writing about events. Topics include strategies for writing about history and strategies for relating current events through various forms of journalism. This course focuses on writing to foster inquiry into topical issues in nonfiction. Following an introduction to appropriate theories and methodologies, the course centers on writing and response to the chosen form in a workshop atmosphere. May be repeated for credit.

Wr 555

Writing About Ideas (4)

Focuses on writing to foster inquiry into topical issues in nonfiction, whether scientific, philosophical, or ethical. Following an introduction to appropriate theories and methodologies, the course centers on writing and response to the chosen form in a workshop atmosphere. May be repeated for credit.

Environmental Programs

218 Science Building II
725-4980

www.esr.pdx.edu/

B.A., B.S. in Environmental Sciences
Minor in Environmental Studies
Minor in Sustainability
M.S., M.E.M., M.S.T.
Ph.D.

Undergraduate program

The Environmental Science Program allows students to develop the skills and interdisciplinary understanding needed to deal with environmental systems and human impact on those systems. Students should consult with a program adviser to assure proper course planning.

The B.A./B.S. degrees in environmental science rest on an interdisciplinary curriculum that develops understanding and expertise in environmental science by building on a foundation in mathematics, natural sciences, and economics complemented by related courses in environmental policy and management. Students complete field experiences working on projects in the University, metropolitan community, and region.

The Environmental Science Program cooperates with several departments and centers, including the departments of Anthropology, Biology, Chemistry, Civil Engineering, Economics, Geography, Geology, History, Mathematics, Physics, Political Science, Sociology; the Center for Science Education; and the School of Business Administration and the College of Urban and Public Affairs.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. In addition to satisfying general University requirements (45 credits), a student majoring in environmental science must complete at least 47 credits of environmental science courses and must meet program requirements

for foundation courses (49-50 credits), and supporting elective courses in science, social science, and humanities (16 credits).

All courses used to satisfy the Environmental Science major requirements, whether taken in the program or in other departments, must be graded C- or above. Program requirements are listed below. Students must complete the foundation courses listed below. All foundation courses should be completed before a student enrolls in the upper-division sequence (ESR 320, 321, 322). Of the 16 credits of 400-level courses required in the core, a maximum of 4 credits may be taken as ESR 404 Internship.

Foundation Courses	Credits
Bi 251, 252, 253 Principles of Biology.....	15
Ch 221, 222, 227, 228 General Chemistry.....	10
Ec 201 Microeconomics or Ec 332	4
G 201, 204 or 202, 205 Geology or Ph 201, 214 Physics or Geog 210 Physical Geography	4-5
Mth 251, 252 Calculus I, II	8
Stat 243, 244 Introduction to Probability and Statistics.....	8
	Total 49-50

Core Courses	Credits
ESR 220 Introduction to Environmental Systems....	4
ESR 221 Applied Environmental Studies: Problem Solving	4
ESR 222 Applied Environmental Studies: Policy Considerations.....	4
ESR 320, 321 Analysis of Environmental Systems I, II	8
ESR 323, 324 Environmental Systems Laboratory I, II.....	4
ESR 322 Environmental Risk Assessment.....	4
ESR 325 Environmental Risk Assessment Lab.....	2
ESR 407 Environmental Seminar	1
ESR 420-429 Advanced Environmental Topics	16
	Total 47

Connected learning electives. Students must complete 16 credits of supporting courses selected from an approved list of courses available on the program website www.esr.pdx.edu. These courses are intended to broaden the student's background and include courses from allied sciences (e.g. biology, geology and geography), courses that focus on the development of skills and techniques (e.g. GIS and remote sensing) useful in environmental science, and courses that address the interactions of humans and the natural environment (e.g. economics, English, history, philosophy, political science, sociology, and urban studies and planning). In selecting these courses, students are strongly encouraged to broaden their studies beyond science by including courses from the social sciences and humanities.

Requirements for minor. To obtain a minor in environmental studies a student must complete at least 28 credits (at least 12 of which must be taken in residence at PSU). At least 4 credits each in biological science, physical sciences (physics, chemistry, geology), economics, and Mth 241 or 251 are expected before admission to the minor.

	Credits
ESR 201 Applied Environmental Studies: Science and Policy	4
ESR 320, 321 Analysis of Environmental Systems I, II.....	8
ESR 322 Environmental Risk Assessment.....	4
Upper-division environmental policy/ management courses.....	4
Upper-division environmental sciences courses.....	8
	Total 28

Environmental policy/management courses (minimum 4 credits) include selected upper-division courses from programs in economics, geography, history, philosophy, political science, sociology, and urban studies and planning. Environmental sciences courses (minimum 8 credits) include selected upper-division courses from programs in biology, chemistry, geography, geology, physics, and public health. A list of approved courses is available from the Environmental Programs Office.

Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling minor requirements. Courses with omnibus numbers 401, 404, 405, 406, and 407 are not allowed for the minor. Additional courses may be required as prerequisites.

Requirements for minor in sustainability. This minor requires a multidisciplinary study of the environmental, social, and economic dimensions of sustainability. To obtain a minor in sustainability a student must complete at least 29 credits (at least 15 of which must be taken in residence at PSU), to including the following:

	Credits
UnSt 224 Environmental Sustainability	4
ESR 222 Regulations/Policy and Sustainability.....	4
Upper-division credits to include at least a total of four courses from the following three categories. Students must choose at least one course from each category.	15-16

Economics/Business

Econ 332 Environmental Economics (4)
Econ 444 Economics of Green Power (4)
ESR 434 Natural Resource Economics (4)
ESR 434 Business Environmental Management Economics (4)
ESR 443 Global Environmental Economics (4)
USP 490 Green Economics and Sustainable Development (3)

Social Issues

- Arch 367 Fundamental of Environmental Design (4)
- Hist 339 Environment and History (4)
- Geog 346 World Population and Food Supply (4)
- Geog 345 Resource Management (4)
- Geog 347 Environmental Issues and Action (4)
- PS 319 Politics of the Environment (4)
- Sci 321 Energy and Society I (4)
- Sci 322 Energy and Society II (4)
- Soc 341 Population Trends and Policy (4)
- Soc 465 Environmental Sociology (4)
- USP 313 Urban Planning: Environmental Issues (4)
- USP 419 Population and Society (4)
- USP 425 Community and the Built Environment (4)

Environmental Systems

- ESR 355 Understanding the Environment (4)
- ESR 356 Understanding Environmental Conservation (4)
- ESR 420 Ecological Toxicology (4)
- ESR 424 Wetland Ecology and Regulations (4)
- ESR 426 Ecology of Stream and Rivers (4)
- ESR 428 Urban Ecology (4)
- ESR 445 Old-Growth Forest Ecology (4)
- Sci 331 Atmospheric Interactions I (4)
- Sci 332 Atmospheric Interactions II (4)
- Sci 335 Water and the Environment I (4)
- Sci 336 Water and the Environment II (4)
- Sci 352 Science and Policy of Climate Change (4)

In addition, students must choose an appropriate capstone:
 UnSt 421 Sustainable Community Service Learning Capstone (A list of acceptable capstone courses will be prepared for each year.)6

Total 29-30

Note: Students earning the minor in sustainability may not also earn the sustainable urban development minor offered by the Toulan School of Urban Studies and Planning unless the courses presented for the minors differ by at least 12 credits.

Graduate programs

The Environmental Sciences and Resources (ESR) graduate program provides a curriculum that will develop scientists and managers able to analyze and understand environmental systems, predict environmental change and participate in the management of the environment. Each student conducts research and completes a thesis or project; each student develops depth in a specific academic area; and each student develops breadth through a set of core courses that include concepts in physical sciences, life sciences, and social sciences. ESR participates in the joint campus program in environmental sciences, studies, and policy in collaboration with Oregon State University and the University of Oregon. Students may take appropriate courses at the other participating campuses.

Doctor of Philosophy in environmental sciences and resources. The Environmental Sciences and Resources (ESR) Doctoral Program provides an opportunity for the student interested in

studies of environmental sciences and resources to engage in relevant research while acquiring advanced academic training in either the Environmental Sciences and Resources Program or one of the cooperating departments—biology, chemistry, civil engineering, economics, geography, geology, or physics. One of the goals of the program is to provide a broadly based understanding of the fields of environmental science coupled with scientific training in one or more specialty areas. Students are encouraged to engage in research programs which cross the boundaries between disciplines. The student will follow a program of study and research approved by the ESR Coordinating Committee. The graduating student will be awarded a degree in environmental sciences and resources.

The following procedures are designed to assure both the student and the faculty that the student is qualified to pursue both the program itself and a successful career in environmental sciences or resources.

Admission requirements

Master of Science and Master of Environmental Management. In addition to the instructions for admission to the graduate program as they appear on page 62, ESR master's programs require the following information from each applicant.

1. Satisfactory scores on the Graduate Record Examination (GRE) aptitude test. A satisfactory score on the Test of English as a Foreign Language (TOEFL) is required for international students.
2. Three letters of evaluation from persons qualified to assess the applicant's promise as a graduate student.
3. Evidence of undergraduate or graduate course work in biology, chemistry, economics, geology, physics, and mathematics (including differential and integral calculus) equivalent to the foundation course requirements for undergraduate students in environmental studies.

Prospective students should contact the program for a statement of current admission policy. A high GPA and acceptable GRE scores do not guarantee admission to master's programs in Environmental Sciences and Resources, because admission is contingent on the availability of program resources and the identification of an appropriate adviser for each student.

Doctor of Philosophy in environmental sciences and resources. Applicants for admission to the ESR Doctoral Program normally will be expected to have completed an undergraduate degree with a major in biology, chemistry, civil engineer-

ing, environmental science, geology, or physics. The ESR Program director will therefore require an evaluation of the applicant's academic record by the department or program in which the applicant intends to obtain advanced academic training. Admission to the program requires that the department or program find the applicant prepared to undertake study at the doctoral level. Questions about specific procedures of evaluation should be directed to the department or program through which the applicant seeks admission to the program.

Applicants may also obtain, upon request, a list of faculty research interests in which dissertation research can be pursued.

Advising. Prior to initial registration each admitted student should obtain information from the appropriate department on the following subjects:

1. Scheduling of diagnostic examinations (if any).
2. Advising procedures prior to selection of research adviser.
3. Procedure for selection of research adviser.

Degree requirements

University master's degree requirements are listed on page 70. Specific degree program requirements are listed below.

Master of Science and Master of Environmental Management. The graduate study program is developed through discussions involving the graduate student, the student's adviser, and the student's graduate committee. The M.S. or M.E.M graduate committee consists of at least three members including the major adviser, and, for the M.S. committee, a representative of the Office of Graduate Studies. The major adviser must be a member of the graduate faculty affiliated with ESR master's programs. The graduate committee must be approved by the ESR Director.

To encourage the development of interdisciplinary graduate study programs, guidelines for course selection are flexible. Students must complete at least 45 graduate credits. The program of study consists of the following minimum credit requirements.

	Credits
Core courses (selected from program list)	12
ESR 507 Seminar (three terms).....	3
Advanced statistical analysis (selected from program list)	4
Area of concentration	12
Elective and supporting courses	8
Thesis/project.....	6
Total	45

Core courses. One core course is required in each of the following three categories: physical environmental processes, ecological processes, and environmental

management. Lists of approved core courses are available from the ESR office or online at <http://www.esr.pdx.edu>.

Quantitative analysis. A course in research methods, experimental design, or statistical analysis, is required to ensure students have sufficient skills for environmental research.

Areas of concentration (tracks). Sets of courses that constitute an area of concentration have been established within the ESR graduate program to give focus to study and research. Areas of concentration for M.S. students consist of at least 15 credits of graduate coursework (courses numbered 500 and above) in areas which the student's adviser and graduate committee recommend to support planned thesis research work. Areas of concentration for M.E.M. students consist of at least 15 credits approved by the student's adviser and graduate committee in one of the areas described below. Lists of approved courses are available from the ESR office.

- ◆ **Air Resources**—coursework in the chemistry and physics of the atmosphere, including trace gas chemistry, the movement of air masses, climatology and topics related to air pollutants.
- ◆ **Water Resources**—coursework concerning the distribution, quantity, and quality of surface and ground water, including course work in hydrology, water quality chemistry, and aquatic ecology.
- ◆ **Land Resources**—coursework on the analysis of lands and landscapes based on soils, underlying geology, and terrestrial vegetation, including course work in geographic information systems and terrestrial ecosystem ecology.

Elective courses. Elective courses are to be defined in the student's program of study, and agreed upon by the student's adviser and graduate committee. Courses may be selected to provide additional background, to explore new areas, and to add depth to a scholastic program.

Thesis or project. A central purpose of the M.S. and M.E.M. degree is to teach students the process of problem solving and research. A minimum of 6 credits is required. Students working toward the M.S. degree will be required to complete original research leading to a thesis, that complies with standards established by the Office of Graduate Studies and Research. Students working toward the M.E.M. degree will be required to complete a project in lieu of a thesis. This project is expected to be the product of original work in an agency, organization, or firm involved in environmental management activities. The project plan, approach, and project report must be approved by the advisory committee in a

manner parallel to that for thesis research. The project report must be presented at a public seminar to be followed by an oral defense of the work conducted by the student's graduate committee.

Master of Science in Teaching. The College of Liberal Arts and Sciences offers the M.S.T. degree in science/environmental science. The M.S.T. program in science/environmental science is offered jointly by the Environmental Sciences and Resources program and the Center for Science Education. In consultation with the graduate adviser, the student should establish the degree program before the completion of 15 credits of coursework. The program must include a minimum of 45 credits in approved graduate courses, to include a minimum of 24 credits in the area of concentration. At least 9 credits, but no more than 15 credits, must be in education courses. In order to fulfill requirements for the degree, the student must satisfactorily complete the degree programs and pass both a final written examination and a final oral examination.

To encourage the development of interdisciplinary graduate study programs, guidelines for course selection are flexible. Students must complete at least 45 graduate credits. The program of study consists of the following minimum credit requirements.

Required courses	Credits
Core courses (selected from program list)	12
ESR 507 Seminar (three terms).....	3
ESR 570 Environmental Education.....	3
Advanced statistical analysis (selected from program list)	4
Graduate level science courses selected from biology, chemistry, geology, and physics (selected courses in geography and public health may be substituted with the approval of the adviser and program director.)	12
Select one of the following options (required courses for these options will be arranged between the adviser and student.):	
Environmental Education Research Option or Environmental Education Curriculum Development Option	
Total	45

Students seeking degrees in the curriculum development option may elect to substitute courses required to obtain the continuing secondary teaching license. Approval of the ESR program director, the Graduate School of Education, and the director of educational licensing is required.

Doctor of Philosophy in environmental sciences and resources. In addition to the requirements listed on page 127, each student must complete the following:

Course requirements	Credits
ESR 620, 621, 622	9
ESR 607 (six terms)	6
	15
Departmental Dissertation (minimum)	27
Total (minimum)	42

In addition to the above general requirements, each student will be required to complete that coursework necessary to indicate competence at the graduate level of the appropriate program or department(s). These courses will be recommended by the student's dissertation committee and approved by the ESR Coordinating Committee.

- ◆ **Other requirements.** Prior to advancement to candidacy, a student must have taken advisory committee-approved courses in Statistics and Computer Programming Language.
- ◆ **Comprehensive examination.** These examinations are administered by the student's major department or program. The student should contact that department for information.
- ◆ **Dissertation.** The student must submit a prospectus outlining a proposed research project suitable for the doctoral dissertation in environmental sciences and resources. This is done under the guidance of the student's major adviser and is approved by the dissertation committee and the ESR Coordinating Committee. The research for the dissertation is conducted under the guidance of the student's dissertation committee. After the dissertation is complete and after advancement to candidacy (see below), a final oral examination will be conducted, open to the public, within the subject area of the dissertation.

Advancement to candidacy. As soon as the student has successfully completed the course and comprehensive examination requirements and has had the dissertation prospectus approved, the student is recommended for advancement to candidacy for the degree of Doctor of Philosophy. This recommendation is approved by the dean of Graduate Studies.

Financial support. There are a limited number of teaching assistantships and research assistantships available. The student should contact the appropriate department or program about the availability of these positions.

Withdrawal. Any student who ceases to be enrolled for more than one academic term without formal leave of absence will be assumed to have withdrawn from the degree program and will be formally dropped from it. Students who fail to make satisfactory progress toward the degree may be dropped from the program.

The student can be readmitted only by formal application, subject to all current admission requirements. In addition, completion of the degree will be subject to the student's meeting all current degree requirements.

Leave of absence. Under special circumstances, requests for a leave of absence may be approved.

Courses

Courses with an asterisk (*) are not offered every year.

ESR 101 Environmental Sciences I (4)

Introduction to the study of the environment and sustainability with a focus on natural processes. Topics will include physical processes and concepts related to air, water, and land as well as ecological processes and concepts including ecosystems, communities, biodiversity, population dynamics, agriculture, and conservation ecology. One two-hour laboratory. The laboratory projects will focus on urban streams, ecosystems of the Portland metropolitan region, and environmental impacts of land use.

ESR 102 Environmental Science II (4)

Introduction to the analytical study of the interaction between humans and the environment. This term will focus on issues of environmental degradation. Topics will include human population growth, pollution of the air and water, energy resource use, and social and economic basis for sustainability. One 2-hour laboratory. The laboratory projects will focus on impact of population growth, pollution, and resource conservation.

ESR 150 Environmental Studies Orientation (1)

Introduction to environmental information using computer and library resources. Introduction to program planning and professional preparation.

ESR 199 Special Studies (Credit to be arranged.)

**ESR 220
Introduction to Environmental Systems (4)**
Introduction to the structure and function of terrestrial, aquatic, and atmospheric systems, including the human actions that affect them. Includes a lab section that introduces basic quantitative techniques for collecting and analyzing data from environmental systems; 2 lecture periods, one 3-hour lab. Recommended prerequisite: ESR 150 (may be taken concurrently).

ESR 221 Applied Environmental Studies: Problem Solving (4)

Environmental sampling, Sampling design, and measurement. Recommended prerequisites: ESR 220; Stat 243.

ESR 222 Applied Environmental Studies: Policy Considerations (4)

Introduction to environmental laws and the regulations promulgated under them. Includes an examination of the genesis of these laws (e.g., NEPA, Clean Air and Water Acts, RCRA, Endangered Species Act) and their history of compliance and violation. Recommended prerequisite: ESR 220 and 221.

ESR 223 Applied Environmental Studies: Project (4)

Project work involving work with an environmental agency, industry, service, or research organization. Recommended prerequisite: ESR 222.

ESR 320 Analysis of Environmental Systems I (4)

Structure and function of environmental systems, with an emphasis on physical processes and environmental system dynamics. Includes a laboratory section using quantitative techniques for conceptualizing and analyzing environmental processes; 3 hours lecture, one 3-hour lab. Recommended prerequisites: Mth 241 or 251, and four credits each in biology, chemistry, and physics or geology.

ESR 321 Analysis of Environmental Systems II (4)

Introduction to the structure and function of environmental systems with an emphasis on ecological processes and human impacts. Includes a laboratory focusing on the use of quantitative techniques for whole system analysis; 3 hours lecture, one 3-hour lab. Recommended prerequisite: ESR 320.

ESR 322 Environmental Risk Assessment (4)

Overview of risk assessment applied to environmental problems, including the impact assessment process, application of cost-benefit analysis, hazard identification, risk characterization, risk assessment, and risk management. Recommended prerequisites: Ec 201, ESR 201, ESR 321.

**ESR 323
Environmental Systems Laboratory I (2)**
Laboratory work to accompany Environmental Systems I (ESR 320). One 4-hour laboratory period. Requires concurrent enrollment in ESR 320.

**ESR 324
Environmental Systems Laboratory II (2)**
Laboratory work to accompany Environmental Systems II (ESR 321). One 4-hour laboratory period. Requires concurrent enrollment in ESR 321.

**ESR 325
Environmental Risk Assessment Lab (2)**
Provides an overview of the main techniques used for environmental risk assessment. Emphasis is on laboratory acute and chronic toxicity tests and field biological stream assessment. Recommended prerequisites: ESR 321, 322, 324.

ESR 355 Understanding Environmental Sustainability I (4)

Emphasizing sustainability, study of the scientific and ecological principles that govern human interactions with the physical and biological systems of the earth. Topics will include ecosystem properties, earth system properties, human population dynamics, and the roles of technological and ethical decisions. Not intended for science majors.

ESR 356 Understanding Environmental Sustainability II (4)

Introduction to the concepts and principles necessary to understand the complex relationship between humans and environmental sustainability. Topics will include energy and pollution as well as biodiversity and land use. Not intended for science majors.

ESR 399 Special Studies (Credit to be arranged.)

**ESR 401
Research (Credit to be arranged.)**
Consent of instructor and program director.

ESR 404 Cooperative Education/Internship (Credit to be arranged.)

**ESR 405
Reading and Conference (Credit to be arranged.)**

**ESR 407
Environmental Seminar (1)**
Weekly seminar series involving student-led discussion of topical environmental issues. May be repeated for up to 3 credits.

**ESR 410
Selected Topics (Credit to be arranged.)**
Consent of instructor.

**ESR 420/520
Ecological Toxicology (4)**
Effects of environmental contaminants at the individual, population, and ecosystem level. Topics will include toxicity test methods, environmental fate of contaminants, and the physiological and ecological effects of selected heavy metals, chlorinated organics, and pesticides.

**ESR 424/524
Wetland Ecology (4)**
Structure and function of wetland ecosystems, with an emphasis on the diversity of regional wetland systems. Topics also include wetland soils, plants, and hydrologic setting and requirements for wetland delineation.

**ESR 425/525
Watershed Hydrology (4)**
Study of the movement and storage of water in watersheds, emphasizing physical processes. Includes systems analysis of watersheds, precipitation, snowmelt, infiltration, evapotranspiration, groundwater flow, streamflow generation, open channel flow, hydrograph analysis and an introduction to watershed hydrologic modeling. Recommended prerequisites: Mth 252, Ph 201, Stat 244; ESR 320.

**ESR 426/526
Ecology of Streams and Rivers (4)**
Evaluation of streams and rivers from an ecosystem perspective, including stream development, biological communities, ecological processes, and methods of assessment as applied to evaluation of common environmental problems.

**ESR 427/527
Watershed Biogeochemistry (4)**
Study of the chemistry of watershed-based ecosystems, emphasizing physical and biological processes. Mechanisms of atmospheric input; rock weathering and soil development; physical and biological controls on the storage and flux of minerals, carbon, and nutrients in terrestrial ecosystems; and impacts of management on biogeochemical processes in watershed-based ecosystems. Recommended prerequisites: Bi 253, Ch 223, ESR 320, Mth 252.

**ESR 428/528
Urban Ecology (4)**
Study of ecological processes in urban environments. Emphasis on responses of flora and fauna to changes in climate, hydrology, geomorphology, geochemistry, soils and available habitat in urban areas. Includes issues of species

conservation, ecosystem management and sustainability in urban systems. Recommended prerequisite: an undergraduate biology course or permission of instructor.

ESR 429/529

Environmental Impact Assessment (4)

Environmental assessments and impact assessment techniques; regulatory and technical requirements of impact assessment. The National Environmental Policy Act, its implementation, implications and uses.

ESR 433/533

Natural Resource Economics (4)

An examination of the economic concepts and theories for analyzing natural resource use and related environmental pollution, including the economics of sustainability. Discussion of renewable and nonrenewable natural resource issues in the Pacific Northwest and policy alternatives. Recommended prerequisite: Ec 201. This course is the same as Ec 433/533; course may be taken only once for credit.

ESR 434/534

Business Environmental Management Economics (4)

Examines the economic costs and benefits that affect the decisions of business firms to develop integrated environmental management systems. Analysis of policy options to foster business environmental management for public goods. Case studies of selected firms. Recommended prerequisite: Ec 201. This course is the same as Ec 434/534; course may be taken only once for credit.

ESR 443/543

Global Environmental Economics (4)

An examination of the economic forces and theories to understand the causes of global environmental problems, and to evaluate policy options to remedy serious problems. Analyses of the economic effects of global environmental agreements and the environmental effects of trade and global commerce in developed and developing countries. This course is the same as Ec 443/543; course may be taken only once for credit.

ESR 445/545

Old-growth Forest Ecology (4)

Exploration of the ecological characteristics of west-side old-growth forests, including their outstanding biodiversity. Landscape level aspects of forest ecosystems, including the role of fire; plus the use of basic forestry measurements to contrast old-growth, second-growth, and plantation stands of trees. Emphasizing field study, this eight-day course is based at an off-campus location for easy access to forest ecosystems. Field site costs in addition to tuition. Recommended prerequisite: upper-division or graduate standing required and an undergraduate sequence in biology.

ESR 450

Case Studies in Environmental Problem Solving (6)

Evaluation of selected cases of environmental problems, including field studies and project work with government and private agencies. Recommended prerequisites: ESR 320, 321, 322.

ESR 471/571

Atmospheric Physics (4)

Cycles of trace gases in the Earth's atmosphere and their role in the environment. Emission,

dispersal, and removal of natural and man-made trace constituents in the atmosphere that determine the Earth's climate and stratospheric ozone layer. Prerequisites: one year each of calculus and calculus-based physics.

Recommended: introductory course in differential equations. This course is the same as Ph 471/571, may only be taken once for credit.

ESR 473/573

Phytoplankton Ecology (4)

Examination of photosynthesis, nutrient uptake, regulation and cell growth processes in the context of algal growth in natural waters. Recommended prerequisites: Bi 251; ESR 321 or Bi 357.

***ESR 475/575**

Limnology and Aquatic Ecology (4)

Kinds, origins, and ecological features and dynamics of freshwater environments. Recommended prerequisite: Ch 223.

ESR 477/577

Limnology Laboratory (2)

Techniques in field and laboratory analysis of freshwater systems. Recommended pre- or corequisite: ESR 475/575.

ESR 478/578

Aquatic Vascular Plants (4)

Classification, biology, ecology, and management of aquatic vascular plants. Course will focus on freshwater systems and include a laboratory featuring field identification and laboratory experimentation. Recommended prerequisite: Bi 357.

ESR 479/579

Fate and Transport of Toxics in the Environment (4)

Chemical, physical, and biological principles that govern the behavior of toxic materials such as heavy metals and synthetic organic compounds in the environment. Course emphasizes practical ways to represent chemical processes in models of pollutant behavior. Topics include: adsorption of pollutants on soils and sediments; transport across sediment-water and air-water interfaces; bioamplification of pollutants; multi-phase fugacity models of organics; case studies of contaminated surface water, sediment and groundwater. Recommended prerequisite: senior or graduate standing. This course is the same as CE 479/579; course may be taken only once for credit.

ESR 501

Research (Credit to be arranged.)

Consent of instructor and program director.

ESR 503

Thesis (Credit to be arranged.)

All aspects of research and thesis writing for master's students.

ESR 504

Cooperative Education/Internship (Credit to be arranged.)

ESR 505

Reading and Conference (Credit to be arranged.)

ESR 506

Special Projects (Credit to be arranged.)

ESR 507

Seminar (1)

Weekly seminar series on topical environmental issues. May be repeated for up to 3 credits.

ESR 509

Practicum (Credit to be arranged.)

ESR 510

Selected Topics (Credit to be arranged.)

Consent of instructor.

ESR 549

Applied Environmental Statistics (4)

Analysis of environmental data (mostly observational data) and the presentation of data and results using graphics. Statistical estimation and testing (including nonparametric procedures), analysis of variance, linear models, tree-based models, nonparametric regression models, and Bayesian decision making.

ESR 550

Multivariate Analysis of Environmental Data (4)

Biological and environmental data are usually complex, consisting of many observations and variables. This course provides an overview of the main techniques of multivariate data analysis that are relevant and useful in ecology and environmental sciences. Emphasis is on ordination and cluster analysis. Prerequisite: one college-level statistics course.

ESR 566/666

Environmental Data Analysis (4)

Same as CE 566/666. Course may only be taken once for credit.

ESR 570

Environmental Education (3)

Overview of the purpose and scope of environmental education. Provides an educational framework and examples of the variety of sites where environmental education is practiced. Specific examples of teaching strategies, materials, and methods will be presented. Students will be expected to carry out a site-based project utilizing some of the materials developed in class.

The Environmental Sciences and Resources Doctoral Program consists of graduate courses available through the Departments of Biology, Chemistry, Civil Engineering, Geology, and Physics that are approved by the student's advisory committee.

ESR 601

Research (Credit to be arranged.)

Research that is not normally part of the thesis.

ESR 603

Dissertation (Credit to be arranged.)

All aspects of thesis including thesis research and writing the dissertation.

ESR 604

Cooperative Education/Internship (Credit to be arranged.)

ESR 605

Reading and Conference (Credit to be arranged.)

Scholarly examination of literature including discussion between student and professor.

ESR 607

Seminar (1)

Environmental Sciences Seminar. Consent of instructor. Pass/no pass only.

ESR 610

Selected Topics (Credit to be arranged.)

Foreign Languages and Literatures

393 Neuberger Hall
725-3522
www.Fll.pdx.edu

- B.A.—Concentration in Chinese, French, German, Japanese, Russian, or Spanish**
- Minor—Concentration in Arabic, Chinese, French, German, Japanese, Russian, or Spanish**
- Certificate in Teaching Japanese as a Foreign Language**
- Secondary Education Program**
- M.A.—Foreign Language: French, German, Japanese, or Spanish**
- M.A.—Foreign Literature and Language: primary languages—French, German, Spanish; secondary languages—Chinese, French, German, Japanese, Russian, or Spanish**
- M.A.T.—French, German, Spanish**
- M.A.T. with Initial License—French, German, Japanese, Spanish**

The Department of Foreign Languages and Literatures offers undergraduate major and minor programs in Chinese, French, German, Japanese, Russian, and Spanish; minor programs in Arabic and Classical Studies; and instruction in the above languages, as well as in Danish, Finnish, Ancient Greek, Modern Greek, Hebrew, Italian, Korean, Latin, Norwegian, Persian (Farsi), Portuguese, Swahili, Swedish, and Turkish. Other languages may be offered from time to time.

Undergraduate programs

Admission requirements

Students majoring in Chinese, French, German, Japanese, Russian, or Spanish are required to demonstrate proficiency at a level determined by the individual language program before being admitted to 400-level courses.

Placement. Students with prior experience in French, German, or Spanish are required to take an on-line placement examination. You may access the test under “Advising” at www.fll.pdx.edu.

Students of Arabic, Chinese, Danish, Finnish, Greek, Hebrew, Italian, Japanese, Korean, Latin, Norwegian, Persian (Farsi), Portuguese, Russian, Swahili, Swedish, or

Turkish may contact the Department of Foreign Languages and Literatures for placement advising.

Credit by examination. Credit by exam may be granted for first-year and second-year language sequences only. A student may be awarded credit by exam for a maximum of one language sequence (12-15 credits). Credit by exam is awarded only for those languages taught by the department. Credit received by examination is graded P/NP only.

Students of French, German, or Spanish may receive credit for first- or second-year by taking a CLEP exam (administered by Testing Services). The amount of credit awarded will depend on the score received. Students of Arabic, Chinese, Danish, Finnish, Greek, Hebrew, Italian, Japanese, Korean, Latin, Norwegian, Persian (Farsi), Portuguese, Russian, Swahili, Swedish, or Turkish should contact the department for individual testing.

Restrictions. The language sequences 101, 102, 103 (or 150, 151) and 201, 202, 203 must be taken in order. Students who have received credit for any one of these may not subsequently receive credit for any of the lower numbered courses. This restriction also applies to transfer credits and credits earned by examination.

Native speakers (defined as students whose formal secondary education was completed in the foreign language) may not register for first- through fourth-year language courses, nor may they receive credit by exam for their native language.

Degree requirements

Requirements for major in foreign languages. The Department of Foreign Languages and Literatures offers undergraduate majors in Chinese, French, German, Japanese, Russian, and Spanish. An undergraduate foreign language major must complete 32 upper-division credits (numbered 300 or higher) in language, literature and culture, an additional 8 credits in 400-level language and literature courses (excluding 401-410), 8 credits in adviser-approved electives, and 4 credits in linguistics (Ling 390, FL 390, or a linguistics course in the target language). French and Spanish majors must include a minimum

of two courses from the 341, 342, 343 sequence and a minimum of 16 400-level credits in their total program.

	Credits
Language, literature, and culture	32
<small>(In Fr and Span this must include two courses from the 341-342-343 sequence and at least 8 400-level credits.)</small>	
400-level courses in the major language	8
<small>(excluding 401-410)</small>	
Adviser-approved electives.....	8
Linguistics	4
<small>(FL 390, Ling 390, or a linguistics course in the major language)</small>	
Total	52

- ◆ Before being admitted to 400-level courses, students will be expected to demonstrate proficiency at a level determined by the individual language program.
- ◆ No more than 8 credits of courses numbered 404 (Cooperative Education) may be counted toward the major.
- ◆ 20 of the required 52 credits must be taken in residence at PSU (excludes credit by exam but includes study abroad credit from PSU approved programs).
- ◆ All courses used to satisfy major requirements must be passed with a grade of C or higher. (C- and P are not acceptable.) Students majoring in a foreign language must maintain a minimum GPA of 2.50 on all courses used to satisfy the major requirements.

Requirements for minor in a foreign language. The Department of Foreign Languages and Literatures offers undergraduate minors in Arabic, Chinese, French, German, Japanese, Russian, and Spanish. An undergraduate foreign language minor must complete 20 upper-division credits (numbered 300 or above) in language, literature, or culture and 4 credits in general linguistics (FL 390, Ling 390, or a linguistics course in the target language).

	Credits
Language, literature and culture	20
Linguistics	4
Total	24

- ◆ No more than 4 credits of courses numbered 404 (Cooperative Education) may be counted toward the minor.
- ◆ Twelve of the required 24 credits must be taken in residence at PSU (excludes credit by exam but includes study

abroad credit from PSU approved programs).

- ◆ All courses used to satisfy the departmental minor requirements, must be graded C or higher. (C- and P are not acceptable). Students minoring in a foreign language must maintain a minimum GPA of 2.50 on all courses used to satisfy the minor requirements.

Requirements for minor in classical studies. An undergraduate minor in classical studies consists of 36 credits of Latin and Ancient Greek (two years of Latin and one of Greek or two years of Greek and one of Latin) and 12 credits of area classes selected from the list below.

Language.....	36
Two years of Latin and one of Ancient Greek or Two years of Ancient Greek and one of Latin	
Area Classes.....	12
ArH 452 Ancient Art: Aegean and Greek	
ArH 452 Ancient Art: Etruscan and Roman	
Eng 317 Greek Mythology	
Grk 330 Ancient Greek Literature in Translation	
Grk 331 Plato as Literature	
Grk 332 Greek Religion	
Grk 333 Women in Ancient Greece	
Grk 334 Greek Ethical Thought	
Grk 335 Sophocles and Euripides	
Hst 315 Greek History	
Hst 316 Roman History	
Lat 330 Roman Culture	
Lat 341 Roman Literature in Translation	
Phi 414 Plato	
Phi 415 Aristotle	
TA 471 Ancient Greek Theater and Drama	
Total	48

- ◆ Twelve of the required 48 credits must be taken in residence at PSU.
- ◆ All courses used to satisfy minor requirements must be graded C or higher. Students minoring in classical studies must maintain a minimum GPA of 2.50 on all courses used to satisfy the minor requirements.

Certificates

Certificate in Teaching Japanese as a Foreign Language (TJFL). This program is designed to familiarize participants with principles of instructional methods in teaching Japanese to speakers of languages whose orthography is not kanji-based. It is designed to fit into the programs of majors in a wide variety of fields, including Japanese, education, linguistics, and the social sciences. Candidates may enroll as post-baccalaureate students or while completing undergraduate degree requirements in another field.

Admission requirements

1. Admission to Portland State University.
2. Japanese proficiency at the ACTFL "Intermediate High" level.

Students whose proficiency is lower may be provisionally admitted; they will need to study Japanese while taking other courses in the certificate program.

Course requirements

To qualify for the TJFL certificate, the student must complete 16 credits in theoretical and applied linguistics (through the departments of Foreign Languages and Literatures or Applied Linguistics), 16 credits in Japanese-area studies (literature, history, anthropology, etc.), and 8 credits in TJFL Methods (Jpn 477, 478).

	Credits
Linguistics.....	16
Area Studies.....	16
TJFL Methods.....	8
Total	40

All courses used to satisfy certificate course requirements must be graded C or above.

SECONDARY EDUCATION PROGRAM

Advisers: **French**, S. Walton; **German**, W. Fischer; **Japanese**, S. Watanabe; **Russian**, M. Hickey; **Spanish**, D. Ostlund

Students who wish to teach a foreign language in Oregon secondary schools must be admitted into the Graduate Teacher Education Program (GTEP) in Portland State's Graduate School of Education and complete the requirements for an Oregon Teaching License. Admission to GTEP as a foreign-language specialist requires a bachelor's degree in a foreign language taught in Oregon schools, and the recommendation of the Department of Foreign Languages and Literatures. For other criteria, please refer to the Graduate School of Education section of this *Bulletin*.

In order to be recommended by the department, the applicant must have:

1. Applied for admission to the Graduate Teacher Education Program in the Graduate School of Education (see page 225).
2. Completed a B.A. or B.S. which includes coursework equivalent to the 52 credits required for a major in one foreign language at Portland State University.
3. Have maintained a 3.00 GPA in the last 40 of the above 52 credits earned.
4. Obtained an Oral Proficiency Rating of Advanced High or higher on the ACTFL scale in French, German, or Spanish, or a rating of Intermediate High or higher in Japanese or Russian.

The Department of Foreign Languages and Literatures highly recommends that applicants earn upper-division credits in their chosen language beyond the minimum of 52 required; that they spend time in a relevant program abroad; and that their coursework include as many of the

following as possible: Phonetics, General Linguistics, Applied Linguistics, Culture and Civilization, Practicum, and Methods of Teaching Foreign Languages.

Graduate programs

On the graduate level, the Department of Foreign Languages and Literatures offers degree programs leading to the M.A. in Foreign Language with a major in French, German, Japanese, or Spanish; the M.A.T. in French, German, or Spanish; the M.A.T. with Initial License in French, German, Japanese, or Spanish and the M.A. in Foreign Literature and Language, with a concentration in two foreign literatures and linguistics.

Deutsche Sommerschule am Pazifik.

Graduate credits earned in German through the Deutsche Sommerschule am Pazifik can be accepted as in-residence credit at Portland State University only if taken after formal admission to the M.A. in Foreign Language program in German, to the M.A. in Foreign Literature and Language, or to the M.A.T. or the M.A.T. with Initial License in German. Graduate credit earned at the DSaP prior to admission to either program is normally limited to 15 credits, in accordance with the University's transfer regulations.

An M.A. degree in German earned solely by attendance at the Sommerschule normally entails four summers' work plus thesis.

Master of Arts in foreign language.

The M.A. in foreign language is a graduate degree with a major in French, German, Japanese, or Spanish language and literature. It is available with a thesis and a non-thesis option. The thesis option is generally recommended for students who intend eventually to obtain a doctorate. The non-thesis option is often appropriate for those who intend to use their M.A. coursework as direct preparation for secondary-school language teaching or another career. Students should consult with their adviser to determine the best option.

Master of Arts in foreign literature and language.

The M.A. in foreign literature and language is a graduate degree with concentration in a primary language, a secondary language, and in linguistics. The primary language may be French, German, or Spanish; the secondary language may be Chinese, French, German, Japanese, Russian, or Spanish.

Master of Arts in Teaching. The M.A.T. degree program, while designed especially for those who wish to strengthen their preparation to teach French, German, or Spanish in secondary schools and two-year

colleges, is open to anyone wishing to pursue graduate work in these languages.

Master of Arts in Teaching with Initial License. The M.A.T. in Foreign Languages with Initial License is available in French, German, Japanese, or Spanish. It is designed for students who are already teaching in the Oregon secondary school system.

Admission requirements

Master of Arts in foreign language. Applicants for admission must meet the University admissions requirements (page 62) as well as the following departmental requirements:

1. A Bachelor of Arts degree or its equivalent in the major language, with a minimum GPA of 3.00 in all coursework.
2. Oral and written proficiency: Advanced High on the ACTFL scale in French, German, and Spanish; Advanced Low in Japanese.

Master of Arts in foreign literature and language. Applicants for admission must meet the University admissions requirements (page 62), as well as the following departmental requirements:

1. In the primary language:
 - a. Bachelor of Arts in the language with a 3.00 GPA in the literature courses, or its equivalent as determined by the Department;
 - b. Oral and written proficiency: Advanced High on ACTFL scale.
2. In the secondary language: Demonstration of third-year proficiency.

Master of Arts in Teaching. Applicants for admission must meet the University admissions requirements (page 62), as well as the following departmental requirements:

1. A Bachelor of Arts degree or its equivalent in the major language, with a minimum GPA of 3.00 in all coursework.
2. Oral and written proficiency: Advanced High on the ACTFL scale.

Master of Arts in Teaching with Initial License. Enrollment in this program is limited to practicing educators in the fields of French, German, Japanese, or Spanish (those already teaching in Oregon secondary schools, but who are not yet licensed). Applicants for admission must meet the University admissions requirements (page 62) as well as the following departmental requirements:

1. A Bachelor of Arts degree or its equivalent in the major language, with a minimum GPA of 3.00 in all coursework.

2. Oral and written proficiency: Advanced High on the ACTFL scale.

Degree requirements

Master of Arts in foreign language. A candidate for the Master of Arts in a Foreign Language must complete a minimum of 45 graduate credits, of which 30 must be taken in residence after admission to the degree program. The 45 credits are to be distributed as follows:

	Credits
Thesis option	
560 Principles of Scholarly Research.....	4
551, 552, 553 (Poetry, Drama, Prose—any two)	8
FL 598 (Methods)	4
503 Thesis	6-9
Additional adviser-approved coursework.....	20-23
Total	45

Non-thesis option	
560 Principles of Scholarly Research.....	4
551, 552, 553 (Poetry, Drama, Prose—any two)	8
FL 598 (Methods)	4
501 Research, or other adviser-approved credits 6-9 and/or 509 combined. See <i>Credit Distribution and Limitations for Master's Degrees</i> , page 65.	6-9
Additional adviser-approved coursework.....	20-23
Total	45

Note: The student's program may include, with adviser's approval, a maximum of 12 credits in 501 and/or 505 and a maximum of 9 credits in 508 and/or 509 combined. See *Credit Distribution and Limitations for Master's Degrees*, page 65.

In addition to the required coursework, the candidate will have to:

- ◆ Demonstrate reading competence in a second foreign language.
- ◆ **Thesis option:** Submit a thesis, written in either the foreign language or in English, and pass a final examination in accordance with University requirements.
- ◆ **Non-thesis option:** Submit two research papers in different adviser-approved subject areas, written either in the foreign language or in English, and pass a final written and oral examination.

Master of Arts in foreign literature and language. A minimum of 60 credits, of which 40 must be earned in residence, distributed among the following areas:

Primary language	Credits
Principles of Scholarly Research 560.....	4
Eight credits chosen from courses numbered 551, 552, 553	8
Other adviser-approved 500-level courses	16
Sub-total	28
Secondary language	Credits
Phonetics 325	4
Advanced Language 511 and 512 or Span 514	8
Eight graduate credits chosen from: 500-level literature (not including Literature in Translation) and/or Linguistics 594, 595, and/or Stylistics 584	8
Sub-total	20

Note: If upper-division courses in phonetics and/or fourth-year language have been successfully completed at the undergraduate level (with a GPA of 3.00 or above), they can be waived, reducing the total credits required by a maximum of 12.

Linguistics and methods	Credits
12 graduate credits chosen from:	
FL 593 Language Proficiency Testing and Teaching	
FL 598 Methods of Teaching Foreign Languages	
Fr 594 French Linguistics	
Fr 597 Applied French Linguistics	
Ger 594 German Linguistics	
Ger 597 Applied German Linguistics	
Span 594 Spanish Linguistics	
Span 597 Applied Spanish Linguistics	
Other adviser-approved courses	
Sub-total	12
Total	60

In addition to the required coursework, the candidate will have to:

- ◆ Submit two research papers to the graduate committee, one dealing with the primary, the other with the secondary area. These may be written either in the primary or secondary languages, respectively, or in English.
- ◆ Be rated in oral and written proficiency in the secondary language only. Minimum proficiency level for French, German, and Spanish: Advanced. For Chinese, Japanese, and Russian: Intermediate High.
- ◆ Pass a final comprehensive written and oral examination over coursework taken in the primary and secondary areas and over the research papers.

Master of Arts in Teaching. A candidate for the M.A.T. in foreign languages must complete a minimum of 45 graduate credits, of which 30 must be taken in residence after admissions to the degree program to include:

	Credits
Principles of Scholarly Research 560.....	4
Two of the following: 551, 552, 553 (Poetry, Drama, Prose)	8
FL 598 (Methods)	4
Adviser-approved education courses	9-15
Other adviser-approved courses	14-20
Total	45

In addition to the required coursework, the candidate will have to:

- ◆ Demonstrate reading competence in a second foreign language.
- ◆ Submit two research papers: one in the area of language or language pedagogy, the other in literature.
- ◆ Complete a comprehensive written and oral examination.

Master of Arts in Teaching with Initial License. To qualify for the M.A.T. in foreign languages with initial license, students must complete the following, of which 35 credits must be taken in residence after admission to the degree program:

	Credits
CI 548 Advanced Secondary Methods: Subject Field in Secondary School	3
or FL 598 Foreign Language Methods	4
CI 548 Advanced Secondary Methods: Reading and Composition in Secondary Schools.....	3
CI 512 Teaching and Learning.....	3
CI 511 Classroom Management	3

SPED 518 Survey of Exceptional Learners	3
CI 509 Practicum: Supervised Teaching in Foreign Language (concurrent with FL 509)	3
FL 509 Practicum: Supervised Teaching in Foreign Language (concurrent with CI 509)	4
Plus a minimum of 28 graduate credits in subject area related to the target language or other adviser approved graduate credits.....	28
Total	50-51

In addition to the required coursework, the candidate will have to:

- ◆ Demonstrate reading competence in a second foreign language.
- ◆ Submit two research papers: one in the area of language or language pedagogy, the other in literature.
- ◆ Complete a comprehensive written and oral examination.

Courses

Courses with an asterisk () are not offered every year.*

All upper-division courses are taught in the target language, unless otherwise noted.

Foreign Languages

FL 199
Special Studies (Credit to be arranged.)

FL 299
Special Studies (Credit to be arranged.)

***FL 331**
Women in the Middle East (4)

Explore the role and status of women in the contemporary Middle East with respect to institutions such as the family, law, education, work and politics—areas which intersect and overlap with broader cultural questions about women and their place in tradition, modernity, nation-building, Islam and the West. This course is the same as Intl 331 and WS 331; course may only be taken once for credit.

***FL 335**
Icelandic Sagas (4)

Explores the sagas and the cultural milieu in which they were created. Conducted in English. Recommended prerequisite: sophomore inquiry.

***FL 390**
Languages of the World (4)

Overview of the world's languages and language families. Presentation of specific languages, basic phonemic and structural analyses to illustrate linguistic terms and concepts.

FL 399
Special Studies (Credit to be arranged.)

FL 401/501
Research (Credit to be arranged.)

FL 403/503
Thesis (Credit to be arranged.)

FL 404/504
Cooperative Education/Internship (Credit to be arranged.)

FL 405/505
Reading and Conference (Credit to be arranged.)

FL 407/507
Seminar (Credit to be arranged.)

FL 408/508
Workshop (Credit to be arranged.)

FL 409/509
Practicum (Credit to be arranged.)

FL 410/510
Selected Topics (Credit to be arranged.)

***FL 447/547**

Major Forces in World Literature (4)

A study of literary forms, theories, and movements, such as Classical Drama, Medieval Romance, Existentialism, Structuralism, The Absurd, Nativism, and Roots. Recommended prerequisite: Sophomore Inquiry or 12 credits of literature. Conducted in English.

***FL 448/548**

Major Figures in World Literature (4)

Concentrated study of the canon of one or more major writers: for example, Dostoevsky, Cervantes, Goethe. Recommended prerequisite: Sophomore Inquiry or 12 credits of literature. Conducted in English.

***FL 449/549**

Major Topics in World Literature and Culture (4)

Study of the treatment of topics in one or more of the cultures of the world. Such topics as Europe as self and other, Don Juan, exile, the quest, outlaws and bandits, ghosts, fairies and gods. Recommended prerequisite: Sophomore Inquiry or 12 credits of literature. Conducted in English.

***FL 493/593**

Language Proficiency Testing and Teaching (4)

Application of proficiency standards in testing and teaching at the novice and intermediate levels. Introduction to ILR/ACTFL/ETS/FSI guidelines and compatible testing methods. Discussion of pragmatic issues; testing technique and test validity; use of teaching materials; logistics. Recommended prerequisite: three years of a foreign language. Conducted in English.

FL 498/598

Methods of Teaching Foreign Languages (4)

Study and analysis of various pedagogical theories as applied to the learning and teaching of foreign languages. Special emphasis on discourse and content analysis. Recommended prerequisite: three years of a foreign language. Conducted in English.

FL 560

Principles of Scholarly Research (4)

A theoretical and practical introduction to research methods and literary theory. Investigation of bibliographic materials, primary texts, secondary literature, and major forms of literary criticism. To be taken in first year of graduate study.

Arabic

Ar 101, 102, 103

First-year Standard Arabic (4, 4, 4)

Introduction to modern literary Arabic. Emphasis on basic grammar, syntax, writing, translation, listening comprehension, and oral communication. For non-native speakers of Arabic only.

Ar 199

Special Studies (Credit to be arranged.)

Ar 201, 202, 203

Second-year Standard Arabic (4, 4, 4)

Continued work in modern literary Arabic with emphasis on basic grammar and syntax, reading prose texts, writing compositions, translation, listening comprehension, and oral communication.

tion. Prerequisite: Ar 103. For non-native speakers of Arabic only.

Ar 299

Special Studies (Credit to be arranged.)

Ar 301, 302, 303

Third-year Standard Arabic (4, 4, 4)

Modern literary Arabic prose, reading, translation, grammar, syntax, and Arabic composition writing; Ar 302 intermediate Arabic prose, reading, translation, complex syntax, and Arabic composition writing. Ar 303 advanced intermediate Arabic prose, reading essays by prominent Arab authors and thinkers. Continued work on complex syntax and composition writing. Prerequisite: Ar 203. For non-native speakers of Arabic only.

Ar 304, 305, 306

Common Spoken Arabic (2, 2, 2)

Practical panArab language used in business, social, and intellectual gatherings in lieu of limited local dialects, or the Fus-ha (classical eloquent literary Arabic of the intellectuals), understandable by any Arab, and usable anywhere in the Arab world. Prerequisite: Ar 103. Does not satisfy B.A. requirement in foreign language.

***Ar 311**

Business and Media Arabic (4)

Reading and translating newspaper materials and business-related texts; viewing of selected Arabic videos and TV programs; conducting conversations in Arabic dealing with issues presented in course materials, to enhance listening comprehension, writing, and speaking skills. Prerequisite: Ar 301.

Ar 399

Special Studies (Credit to be arranged.)

Ar 401

Research (Credit to be arranged.)

Ar 404

Cooperative Education/Internship (Credit to be arranged.)

Ar 409

Practicum (Credit to be arranged.)

Ar 410

Selected Topics (Credit to be arranged.)

***Ar 411**

Topics in Modern Arabic Prose (4)

Reading advanced Arabic essays and short stories by prominent authors presenting various genres of Arabic literature. Analysis and critique writing. Prerequisite: Ar 301.

***Ar 412**

Topics in Classical-modern Arabic Poetry (4)

Reading light poetry by master poets from early Arabia, Abbasid, Andalusian, Mahjar, and modern times. Prerequisite: Ar 301.

***Ar 417**

Folk Literature of the Arabs (4)

Topics include selected epics, folktales, proverbs, and jokes. Analysis of texts in their socio-cultural context. Viewing critical cultural videos. Recommended prerequisite: Sophomore Inquiry or 4 credits of upper-division literature. Conducted in English.

***Ar 418**

Folk Poetry of the Arabs (4)

Topics include muwashshahat, modern lyrics, folk songs, and improvised sung poetry-Zajal. Analysis of texts in the socio-cultural context. Viewing critical cultural videos. Recommended prerequisite: Sophomore Inquiry or 4 credits of upper-division literature. Conducted in English.

Ar 441*Major Arabic Works in Translation (4)**

Study of selected masterpieces of Arabic literature in English translation: short stories, women's essays, poetry, folk literature, and introduction to Arab culture. Viewing critical films and videos. Lectures and discussions in English. Recommended prerequisite: 4 credits of upper-division literature. Course may be repeated for credit if content varies.

Chinese**Chn 101, 102, 103****First-year Chinese (5, 5, 5)**

An introduction to Mandarin: listening, speaking, reading, and writing. Characters and spoken language presented concurrently throughout the year.

Chn 199**Special Studies (Credit to be arranged.)****Chn 201, 202, 203****Second-year Chinese (5, 5, 5)**

Continued work in Mandarin, with emphasis on mastering all basic grammatical structures, developing conversation skills, and building vocabulary in characters with correct pronunciation. Recommended prerequisite: Chn 103.

Chn 299**Special Studies (Credit to be arranged.)****Chn 301, 302, 303****Third-year Chinese (4, 4, 4)**

Intermediate conversation, reading, writing, vocabulary building, and grammar. Introduction to literary and expository texts. Recommended prerequisite: Chn 203.

Chn 304*Chinese Newspaper Readings (4)**

Practical introduction to the reading and accurate understanding of Chinese newspapers and related specialized styles of writing. Recommended as a complement to third-year Chinese. Recommended prerequisite: Chn 203.

Chn 306*Business Chinese (4)**

Practice in oral and written Chinese at the upper-intermediate level, with emphasis on business vocabulary and procedures. Recommended as a complement to third-year Chinese. Recommended prerequisites: Chn 203; Chn 303, 304.

Chn 311, 312*Introductory Classical Chinese (4, 4)**

Readings in the traditional literary language, designed to provide familiarity with essential particles and structures, build vocabulary, and introduce works from all genres and periods. Recommended as a complement to third-year Chinese; preparation for advanced work in either modern or classical Chinese. Recommended prerequisite: Chn 203.

Chn 341*Topics in Chinese Literature and Thought: Service and Retreat (4)**

Interdisciplinary readings from the core of the written tradition, including history, poetry, classical anecdotes and essays, related to the central issues facing the Chinese elite throughout history: whether, how, and under what conditions to serve the state. Conducted in English.

Chn 342, 343*Chinese Vernacular Literature (4, 4)**

342 emphasizes traditional poetry and fiction from 700 BC to the late nineteenth century; 343 emphasizes influential works of the twentieth century, from semi-traditional to avant-garde. Conducted in English.

Chn 399**Special Studies (Credit to be arranged.)****Chn 404/504****Cooperative Education/Internship (Credit to be arranged.)****Chn 405/505****Reading and Conference (Credit to be arranged.)****Chn 408/508****Workshop (Credit to be arranged.)****Chn 409/509****Practicum (Credit to be arranged.)****Chn 410/510****Selected Topics (Credit to be arranged.)*****Chn 411/511, 412/512****Advanced Chinese (4, 4)**

Development of facility with complex patterns in conversation, reading and writing. Topics such as Rural China, The Philosophers, Documentary Chinese, The Structure of Chinese. Recommended prerequisites: Chn 303; Chn 304, 311, 312.

Chn 413/513*Advanced Classical Chinese (4)**

Readings from classical works of various genres and historical periods, designed to solidify the structures introduced in Chn 311 and 312, build further vocabulary and introduce the fundamentals of classical Chinese literary history. Recommended prerequisite: third-year coursework in Chinese, preferably including Chn 311 and 312.

Chn 420/520, 421/521*Readings in Chinese Literature (4, 4)**

Reading, analysis, and discussion of representative literary texts. Chn 420 focuses on pre-modern topics such as "Traditional Chinese Fiction" and "Chinese Classical Masterpieces," while Chn 421 addresses primarily twentieth-century topics such as "Chinese Nativist Literature" or "Chinese Urban Literature." Recommended prerequisites: Chn 303; Chn 304, 311, 312.

Chn 490/590*History of the Chinese Language (4)**

History of the Chinese language and language family, with emphasis on the development of the current standard language. Evolution of phonology, morphology, and syntax in spoken Chinese, development of the Chinese writing system, history of Chinese lexicography, and current language policy. Conducted in English. Recommended prerequisite: at least one course in linguistics (Ling 290 or above), or proficiency in Chinese equivalent to Chn 203.

Danish**Dane 101, 102, 103****First-year Danish (4, 4, 4)**

Beginning Danish. Emphasis on communication skills: listening, speaking, reading, writing.

Dane 199**Special Studies (Credit to be arranged.)****Dane 201, 202, 203****Second-year Danish (4, 4, 4)**

Intensive review of basics introduced in first-year courses and further development of communication skills. Recommended prerequisite: Dane 103.

Dane 299**Special Studies (Credit to be arranged.)****Dane 316****Readings in Danish (2)**

A variable-content course designed to give advanced students of Danish experience reading a variety of content areas. Taken in conjunction with regularly scheduled corequisite FLL courses taught in English. Recommended prerequisite: Dane 203.

Dane 345*Hans Christian Andersen (4)**

Studies the works of Hans Christian Andersen, paying particular attention to the tales. Recommended prerequisite: Sophomore Inquiry. Conducted in English.

Dane 346*20th Century Danish Women Writers (4)**

Examination of works of 20th century Danish women writers with attention to themes, styles, and characteristics in light of the literary trends of their times and feminist criticism. Readings, lectures, and discussions in English.

Dane 347*Major Works in Danish Literature (4)**

Four centuries of Danish masterpieces with attention to themes, styles and characteristics in light of the literary trends of their times. Conducted in English. Recommended prerequisite: sophomore inquiry.

Dane 361**Danish Films from Dreyer to Dogmer (4)**

Examines a number of Danish films produced from 1928 to the present. Explores Denmark's position in the context of the world film industry as well as the Dogmer movement. Readings, lecture, and discussion in English.

Farsi

See Persian on page 139

Finnish**Finn 101, 102, 103****First-year Finnish (4, 4, 4)**

Beginning Finnish. Emphasis on communication skills: listening, speaking, reading, writing.

Finn 199**Special Studies (Credit to be arranged.)*****Finn 201, 202, 203****Second-year Finnish (4, 4, 4)**

Intensive review of basics introduced in first-year courses and further development of communication skills. Recommended prerequisite: Finn 103.

Finn 299**Special Studies (Credit to be arranged.)**

French

Fr 101, 102, 103

First-year French (4, 4, 4)

An introduction to elementary French. Emphasis on listening comprehension and oral practice, including the elements of grammar, vocabulary building, and elementary readings.

Fr 105

French Film (1)

Initiation to French culture and listening skills through short lectures in English and feature-length film screenings in French (with English subtitles). Cannot be taken simultaneously with Fr 305.

*Fr 150, 151

First-year French (Intensive) (6, 6)

A two-term course covering the content of Fr 101, 102, 103.

Fr 199

Special Studies (Credit to be arranged.)

Fr 201, 202, 203

Second-year French (4, 4, 4)

Intensive review of basic materials introduced in First-Year French and further development of communication skills. Recommended prerequisite: Fr 103.

Fr 299

Special Studies (Credit to be arranged.)

Fr 301, 302, 303

Third-year French (4, 4, 4)

Development of speaking, listening, reading and writing skills and a review of grammar through study of appropriate texts, conversation, activities, and written assignments. Recommended prerequisite: Fr 203.

Fr 305

Topics in French Film (4)

Focus on conversation and writing skills through the viewing and discussion of films. Topics may include: the history of French and Francophone cinema; the history of France through film. Recommended prerequisite: Fr 203 and 4 hours of 300-level French.

*Fr 325

French Phonetics and Phonology (4)

Introduction to the sounds of French: their place and manner of articulation (phonetics) as well as how they pattern with respect to each other and as influenced by morphological and syntactic factors (phonology). Recommended prerequisite: Fr 203.

*Fr 330

Topics in Culture and Civilization (4)

The development of French life, thought, and arts of different periods, from the Middle Ages to the 20th century: for example, Pre-Revolution, Revolution through 19th century, and contemporary. Recommended prerequisite: Fr 203. 4 hours of 300-level French.

Fr 335

19th Century France (4)

French politics, society and their reflections in literature from the Revolution to the 3rd Republic (1871-). Main themes: *ancien regime*, Revolution, French political instability, rise of the *bourgeoisie*, growth of working class, reflection of these themes in major literary works. Conducted in English. Recommended prerequisite: Hst 103 or UnSt 226.

Fr 340

Fundamentals of French Literary Studies (4)

An introduction to the study of French litera-

ture. Lectures and discussion on French prosody, genres, fundamentals of literary analysis, and criticism. To be taken concurrently with, or prior to, Fr 341, 342, 343. Recommended prerequisite: Fr 203.

Fr 341, 342, 343

Introduction to French Literature (4, 4, 4)

French literature from the Middle Ages to the present. Poetry, theater, and prose readings from representative authors. Recommended prerequisite: Fr 203 and Fr 301 or 302.

Fr 399

Special Studies (Credit to be arranged.)

Fr 401/501

Research (Credit to be arranged.)

Fr 404/504

Cooperative Education/Internship (Credit to be arranged.)

Fr 405/505

Reading and Conference (Credit to be arranged.) Consent of instructor.

Fr 407/507

Seminar (Credit to be arranged.) Consent of instructor.

Fr 408/508

Workshop (Credit to be arranged.) Consent of instructor.

Fr 409/509

Practicum (Credit to be arranged.)

Fr 410/510

Selected Topics (Credit to be arranged.)

Fr 411/511, 412/512

Advanced French (4, 4)

Special problems of French grammar; selected writing and reading assignments and discussion. Recommended prerequisite: Fr 303.

*Fr 414/514

Advanced French Grammar (4)

A systematic approach to the study of French grammar and syntax for majors and prospective teachers. Recommended prerequisite: Fr 303.

*Fr 415/515

Business French (4)

Advanced work in the language of business and economics. Recommended prerequisite: Fr 303.

Fr 417/517

Translation (4)

Special problems of translating between French and English based on a variety of texts, both literary and non-literary. Recommended prerequisite: Fr 303.

*Fr 419/519

Medieval French Literature (4)

Selected works of Old French literature (reading in modern French translation). Recommended prerequisites: at least 8 credits from Fr 341, 342, 343.

*Fr 420/520

Renaissance French Literature (4)

Selected works of literature representative of the French Renaissance. Recommended prerequisites: at least 8 credits from Fr 341, 342, 343.

*Fr 421/521

Seventeenth-century French Literature (4)

Readings from major classical writers from the era of Louis XIV. Recommended prerequisites: at least 8 credits from Fr 341, 342, or 343.

*Fr 423/523

Eighteenth-century French Literature (4)

Reading, analysis and critique of the major works written in the Age of Enlightenment. Recommended prerequisites: at least 8 credits from Fr 341, 342, or 343.

*Fr 427/527, 428/528

Nineteenth-century French Literature (4, 4)

Selected works of prose, poetry, and drama from the 19th century writers. Recommended prerequisites: at least 8 credits from Fr 341, 342, or 343.

*Fr 433/533, 434/534

Twentieth-century French Literature (4, 4)

Readings in poetry, drama, and prose. Recommended prerequisites: at least 8 credits from Fr 341, 342, or 343.

*Fr 435/535

Francophone Literature of the 20th Century (4)

Readings in 20th century literature of French expression from outside metropolitan France: i.e., Africa, Quebec, and the Caribbean. Recommended prerequisites: at least 8 credits from Fr 341, 341, or 343.

*Fr 441/541

Major Works In Translation (4)

Study of texts representative of major French authors, periods, themes or genres in translation: such topics as Classical drama, Realism, contemporary novel, Flaubert, and Camus. Readings, lectures, and discussions in English. Recommended prerequisite: 4 credits of upper-division literature.

*Fr 442/542

Medieval Works in Translation (4)

Study of texts from the French middle ages. Readings, lectures, and discussions in English. Recommended prerequisite: 4 credits of upper-division literature.

*Fr 490/590

History of the French Language (4)

Study of the development of the French language in terms of phonological, morphological, and syntactical changes. Recommended prerequisite: Fr 303.

*Fr 494/594

French Linguistics (4)

Introduction to the basic concepts of linguistics and their application to the French language. Emphasis on practical analysis of the sound and the grammatical systems. Brief survey of the historical development, followed by an analysis of the phonetics, phonemics, morphology, and syntax of modern French. Conducted in English. Recommended prerequisites: Fr 303, 325.

*Fr 497/597

Applied French Linguistics (4)

A practical application of linguistics to modern French. Emphasis on a contrastive analysis of the structures of French and English. Recommended prerequisites: Fr 303 and 4 credits of linguistics.

Fr 503

Thesis (Credit to be arranged.)

*Fr 551

French Poetry (4)

Study of French poetry. Analysis of form and content.

*Fr 552

French Drama (4)

Critical study of representative works of French drama.

*Fr 553

French Prose (4)

Study of representative works of French fiction according to genre, period, theme, or authors.

Fr 584*French Stylistics (4)**

A study of vocabulary, sentence structure, metaphor, and other elements that characterize the style of a writer, a period, or a movement.

German**Ger 101, 102, 103****First-year German (4, 4, 4)**

Beginning German. Emphasis on communication skills: listening, speaking, reading, writing.

Ger 150, 151*First-year German (Intensive) (6, 6)**

A two-term course covering the content of Ger 102, 102, 103.

Ger 199**Special Studies (Credit to be arranged.)****Ger 201, 202, 203****Second-year German (4, 4, 4)**

Intensive review of basics introduced in first year courses and further development of communication skills. Recommended prerequisite: Ger 103.

Ger 299**Special Studies (Credit to be arranged.)****Ger 301****Listening and Speaking (4)**

Continued intensive practice in listening and speaking German. May be taken concurrently with Ger 302. Recommended prerequisite: Ger 203.

Ger 302 Reading and Writing (4)

Continued intensive practice in reading and writing German. May be taken concurrently with Ger 301. Recommended prerequisite: Ger 203.

Ger 320*German for the Business and Professional World (4)**

Intensive practice in scholarly, technical, and business language. Recommended prerequisite: Ger 203.

Ger 325*German Phonetics and Phonology (4)**

Introduction to the sounds of German: their place and manner of articulation (phonetics) as well as how they pattern with respect to each other and as influenced by morphological and syntactic factors (phonology). Conducted in English. Recommended prerequisite: Ger 203.

Ger 330*Topics in Culture and Civilization (4)**

Study of the historical development of life, thought, and the arts in German-speaking lands in times and places such as the Middle Ages, 19th-century Vienna, 20th-century Berlin, the Weimar period, or in fields such as film. Recommended prerequisite: Ger 203.

Ger 340*Fundamentals of German Literary Studies (4)**

An introduction to the study of German literature. Lectures and discussion on German prosody, genres, fundamentals of literary analysis and criticism. Recommended prerequisite: Ger 203.

Ger 341, 342,**Introduction to German Literature (4, 4)**

Readings from representative German authors from the Middle Ages to the present. Recommended prerequisites: Ger 203.

Ger 399**Special Studies (Credit to be arranged.)****Ger 401/501****Research (Credit to be arranged.)****Ger 404/504****Cooperative Education/Internship (Credit to be arranged.)****Ger 405/505****Reading and Conference (Credit to be arranged.)**

Consent of instructor.

Ger 407/507**Seminar (Credit to be arranged.)**

Consent of instructor.

Ger 408/508**Workshop (Credit to be arranged.)**

Consent of instructor.

Ger 409/509**Practicum (Credit to be arranged.)****Ger 410/510****Selected Topics (Credit to be arranged.)****Ger 411/511, 412/512****Advanced German (4, 4)**

Special features of German; selected writing and reading assignments, discussion. Recommended prerequisite: Ger 302.

Ger 414/514*Advanced German Grammar (4)**

Structural review of German morphology and syntax. Recommended prerequisite: Ger 302.

Ger 415/515*Business German (4)**

Advanced work in the language of business and economics. Recommended prerequisite: Ger 302.

Ger 421/521*German Short Prose (4)**

Study of the German Novelle and other shorter prose of the 19th and 20th centuries. Recommended prerequisites: at least 8 credits from Ger 340, 341, or 342.

Ger 422/522*18th Century German Literature (4)**

Study of the poetry, drama, and prose of the German Enlightenment and the Sturm und Drang. Recommended prerequisites: at least 8 credits from Ger 340, 341, or 342.

Ger 427/527*The Age of Goethe (4)**

Study of German poetry, drama, and prose from the Sturm und Drang and classicism to the beginning of romanticism. Recommended prerequisites: at least 8 credits from Ger 340, 341, or 342.

Ger 428/528*German Romanticism (4)**

Study of the literature, art, and aesthetic theories of late 18th and 19th century Germany. Recommended prerequisites: at least 8 credits from Ger 340, 341, or 342.

Ger 429/529*German Realism and Naturalism (4)**

Study of the poetry, drama, and prose of the second half of the 19th century. Recommended prerequisites: at least 8 credits from Ger 340, 341, or 342.

Ger 433/533, 434/534*German Literature of the 20th Century (4, 4)**

Readings in modern poetry, drama, and prose. Ger 433/533: from the turn of the century to the end of World War II; Ger 434/534: from the post-war years to the present. Recommended

prerequisites: at least 8 credits from Ger 340, 341, or 342.

Ger 441/541*Major Works in Translation (4)**

Study of selections from masterpieces of German literature in translation, such as Goethe, the Weimar period, German Intellectual History, Ancient Myth in German Literature. Readings, lectures, and discussions in English. Recommended prerequisite: 4 credits of upper-division literature.

Ger 442/542*Medieval Works in Translation (4)**

Study of texts from the German Middle Ages. Readings, lectures, and discussions in English. Recommended prerequisite: 4 credits of upper-division literature.

Ger 490/590*History of the German Language (4)**

A general historical survey showing the development of German grammar, word formation, vocabulary, and syntax with reference to the history of other Germanic languages. Conducted in English. Recommended prerequisite: Ger 302.

Ger 494/594*German Linguistics (4)**

Introduction to the basic concepts in linguistics and their application to German. Review of sound system; focus on morphology and syntax. Conducted in English. Recommended prerequisite: Ger 302.

Ger 497/597*Applied German Linguistics (4)**

A practical application of linguistic method to modern German. Emphasis on contrastive analysis of German and English. Recommended prerequisites: Ger 302 and 4 credits in linguistics.

Ger 503**Thesis (Credit to be arranged.)*****Ger 551****German Poetry (4)**

Study of German lyric poetry. Analysis of form and content.

***Ger 552 German Drama (4)**

Critical study of representative works of German drama.

Ger 553*German Prose (4)**

Study of representative works of German prose fiction.

Ger 554*Middle High German (4)**

Linguistic and literary study of representative Middle High German texts. Conducted in English, readings in German. Recommended prerequisite: Ger 302.

Ger 584*German Stylistics (4)**

A study of the stylistic aspects of fictional and nonfictional writings within the context of the cultural and philosophical history of modern Germany.

Greek**Grk 101, 102, 103****First-year Ancient Greek (4, 4, 4)**

An introduction to ancient Greek. The course will provide a survey of ancient Greek grammar and syntax, as well as vocabulary building and elementary readings.

Grk 201, 202, 203**Second-year Ancient Greek (4, 4, 4)**

Course provides a review of grammar in the context of selected readings from archaic and classical authors.

Grk 330*Ancient Greek Literature in Translation (4)**

Course provides a survey of ancient Greek literature from the eighth century B.C. through the classical period. The course will cover epic, historical, dramatic, and philosophical texts. Conducted in English.

Grk 331*Plato as Literature (4)**

Course in translation provides an introduction to the dialogues of Plato in their cultural context. Special attention will be given to the significance of Plato's use of the dialogue form, the role of characters in the dialogue, and his ethical and political philosophy. Conducted in English.

Grk 332*Greek Religion (4)**

Provides a survey of Greek religious beliefs, rituals, and practices in pre-Christian antiquity through a study of the literary, inscriptional, artistic, and archaeological evidence. Conducted in English.

Grk 333*Women in Ancient Greece (4)**

Course on the role of women in ancient Greece as daughters, wives, concubines, mothers, heiresses, writers, priestesses, and participants in religious rituals and festivals. Conducted in English.

Grk 334*Greek Ethical Thought (4)**

A survey of the development of Greek ethical thinking from the archaic period through the Hellenistic period, including the role of ethics in Greek religion, Platonic dialogues, Aristotle's *Nicomachean Ethics* and Epicurean and Stoic philosophy.

Grk 335*Sophocles and Euripides (4)**

Course on two of the most important tragedians of ancient Greece, covering all of the extant works of Sophocles and the most important works of Euripides in their cultural context. Conducted in English.

Hebrew***Heb 101, 102, 103****First-year Modern Hebrew (4, 4, 4)**

Introduction to modern Hebrew; emphasis on basic grammar, syntax, noun and verb formation, listening and reading comprehension, translation, writing, and speaking. For non-native speakers of Hebrew only.

Heb 199**Special Studies (Credit to be arranged.)*****Heb 201, 202, 203****Second-year Modern Hebrew (4, 4, 4)**

Continued study of grammar and syntax, reading intermediate literary texts, translation, conversation, writing, and speaking. Recommended prerequisite: Heb 103. For non-native speakers of Hebrew only.

Heb 299**Special Studies (Credit to be arranged.)*****Heb 301, 302****Modern Hebrew Readings (4, 4)**

301 emphasizes essays, short stories, and selected poems. 302 emphasizes modern media Hebrew. Translation and writing. Recommended prerequisite: Heb 203. For non-native speakers of Hebrew only.

Heb 399**Special Studies (Credit to be arranged.)****Heb 401****Research (Credit to be arranged.)**

Consent of instructor.

Heb 404**Cooperative Education/Internship (Credit to be arranged.)****Heb 410****Selected Topics (Credit to be arranged.)****Italian****It 101, 102, 103****First-year Italian (4, 4, 4)**

An introduction to elementary Italian. Emphasis on listening comprehension and oral practice, the elements of grammar, vocabulary building, and elementary readings.

It 199**Special Studies (Credit to be arranged.)****It 201, 202, 203****Second-year Italian (4, 4, 4)**

Intensive review of basic materials introduced in first-year program and further development of communication skills.

It 299**Special Studies (Credit to be arranged.)****It 301, 302****Third-year Italian (4, 4)**

Composition and conversation at the intermediate level. Recommended prerequisite: It 203.

It 399**Special Studies (Credit to be arranged.)****It 404****Cooperative Education/Internship (Credit to be arranged.)****It 409****Practicum (Credit to be arranged.)****It 410****Selected Topics (Credit to be arranged.)****Japanese****Jpn 101, 102, 103****First-year Japanese (5, 5, 5)**

An introduction to the Japanese language with emphasis on listening comprehension, speaking, grammatical patterns, the syllabaries, and characters in elementary reading and writing.

Jpn 150, 151*First-year Japanese (Intensive) (7, 8)**

A two-term course covering the content of Jpn 101, 102, 103.

Jpn 199**Special Studies (Credit to be arranged.)****Jpn 201, 202, 203****Second-year Japanese (5, 5, 5)**

Continued work in the Japanese language with emphasis on listening comprehension, speaking, grammatical patterns, the syllabaries, and characters in elementary reading and writing. Recommended prerequisite: Jpn 103.

Jpn 299**Special Studies (Credit to be arranged.)****Jpn 301, 302****Third-year Japanese: Speaking and Listening (4, 4)**

Continued work in the Japanese language with emphasis on listening and speaking skills in a variety of contexts. Students enrolled in this course are encouraged to sign up for Jpn 304, 305 concurrently. Either sequence (Jpn 301, 302 or Jpn 304, 305) satisfies the International Studies requirement for third-year Japanese. Recommended prerequisite: Jpn 203.

Jpn 304, 305**Third-year Japanese: Reading and Writing (4, 4)**

Continued work in the Japanese language with emphasis on reading and writing skills in different kinds of texts. Students enrolled in this course are encouraged to sign up for Jpn 301, 302 concurrently. Either sequence (301, 302 or 304, 305) satisfies the International Studies requirement for third-year Japanese. Recommended prerequisite: Jpn 203.

Jpn 314, 315**Beginning Japanese Grammar/Intermediate Japanese Grammar (2, 2)**

A systematic approach to the study of Japanese grammar for transfer students, for majors, and for teachers.

Jpn 325*Japanese Phonetics and Phonology (4)**

Introduction to the sounds of Japanese: their place and manner of articulation (phonetics) as well as how they pattern with respect to each other and as influenced by morphological and syntactic factors (phonology). Recommended prerequisite: Jpn 203.

Jpn 341, 342**Topics in Japanese Literature (In Translation) (4,4)**

Introductory survey of Japanese literature from its beginnings to the present, including such works as *The Man'yōshū*, *The Tale of Genji*, plays by Zeami and Chikamatsu, Bashō's haiku, and masterpieces of modern fiction. Jpn 341 focuses on classical and medieval literature; Jpn 342 focuses on Tokugawa and modern literature. Conducted in English. Recommended prerequisite: 8 credits of literature.

Jpn 361**Japanese Literature Through Film (4)**

Readings of masterpieces of Japanese literature and viewing of feature films based on them. Viewings are followed by discussion of the social, historical, and artistic significance of the works. Readings and discussions are in English, and films have English subtitles.

Jpn 399**Special Studies (Credit to be arranged.)****Jpn 404/504****Cooperative Education/Internship (Credit to be arranged.)****Jpn 405/505****Reading and Conference (Credit to be arranged.)****Jpn 407/507****Seminar (Credit to be arranged.)****Jpn 408/508****Workshop (Credit to be arranged.)****Jpn 409/509****Practicum (Credit to be arranged.)**

Jpn 410/510**Selected Topics (Credit to be arranged.)****Jpn 411/511, 412/512****Advanced Japanese:****Speaking and Listening (4, 4)**

Development of oral communication skills with complex patterns in informal and formal situations. Recommended prerequisites: Jpn 302, 305.

Jpn 414/514**Advanced Japanese Grammar (4)**

A systematic approach to the study of Japanese grammar for advanced students and majors, and for teachers. Recommended prerequisite: Jpn 302 or 315.

Jpn 416/516, 417/517**Advanced Japanese:****Reading and Writing (2, 2)**

Development of facility with complex patterns in reading and writing using semi-authentic and authentic materials. Recommended corequisites: Jpn 411/511, 412/512. Recommended prerequisites: Jpn 302 and 305.

Jpn 420/520, 421/521*Readings in Japanese Literature (4, 4)**

Reading, analysis, translation, and discussion of representative literary texts. Jpn 420/520 will focus on pre-modern literature, Jpn 421/521 on literature from the Meiji Period to the present. Conducted primarily in Japanese. Recommended prerequisites: Jpn 302, 305.

Jpn 422/522**Traditional Japanese Drama (4)**

An introduction to the classical forms of *nô* *kyôgen*, *bunraku* and *kabuki*. Students read plays and view videos of plays in performance, analyzing them in their historical, social, and performance contexts. Students have the option of performing short dances of plays in a class recital. Conducted in English.

Jpn 477/577, 478/578**Teaching Japanese****As a Foreign Language (4, 4)**

Principles of instructional methods in teaching Japanese to speakers of languages whose orthography is not Kanji-based. Readings in language pedagogy, particularly the pedagogy of non-Indo-European languages. Students are required to teach and observe classes in an approved Japanese program. Recommended prerequisites: Ling 390, Jpn 303.

Jpn 494/594*Japanese Sociolinguistics (4)**

Study of the key concepts that characterize Japanese language and culture, along with empirical analysis of Japanese communication style. Recommended prerequisite: Jpn 302.

Jpn 551*Japanese Language and Literature (4)**

In-depth study of a single genre (drama, poetry, or prose). Genre and approach (historical survey, period-specific) will vary from year to year.

Jpn 552*Japanese Language and Linguistics (4)**

Comparative study of intellectual approaches to Japanese language and its analysis, including native (*kokugo*) theories, American structuralism, modern linguistics, and critical theory. Emphasis will vary from year to year.

Korean**Kor 101, 102, 103****First-year Korean (5, 5, 5)**

An introduction to the Korean language with emphasis on listening comprehension, speaking, elementary reading and writing, and grammatical patterns.

Kor 199**Special Studies (Credit to be arranged.)****Kor 201, 202, 203****Second-year Korean (5, 5, 5)**

Continued work in the Korean language with emphasis on listening comprehension, speaking, reading and writing, and grammatical patterns. Recommended prerequisite: Kor 103.

Kor 299**Special Studies (Credit to be arranged.)*****Kor 301, 302****Third-year Korean (4, 4)**

Continued work in the Korean language in a widening variety of contexts. 301 emphasizes listening and speaking skills; 302 reading, writing, and vocabulary development. Recommended prerequisite: Kor 203.

Kor 399**Special Studies (Credit to be arranged.)****Kor 404****Cooperative Education/Internship (Credit to be arranged.)****Kor 409****Practicum (Credit to be arranged.)****Kor 410****Selected Topics (Credit to be arranged.)****Latin****Lat 101, 102, 103****First-year Latin (4, 4, 4)**

An introduction to elementary Latin. Emphasis on the elements of grammar, vocabulary building, and elementary readings.

Lat 199**Special Studies (Credit to be arranged.)****Lat 201, 202, 203****Second-year Latin (4, 4, 4)**

Intensive review of basic materials introduced in first-year program and further development of reading skills. Recommended prerequisite: Lat 103.

Lat 299**Special Studies (Credit to be arranged.)*****Lat 301, 302, 303****Third-year Latin (2, 2, 2)**

Survey of classical Latin syntax; extensive practice in prose composition; close study of poetic techniques. Recommended prerequisite: Lat 203.

Lat 330*Roman Culture (4)**

A survey of daily life in ancient Rome, including Roman families, religious practices, entertainment, political life, arts and architecture. Conducted in English.

Lat 331*Early Medieval Civilization (4)**

A survey of early medieval civilization concentrating on daily life, the church, the state, and arts and letters. Conducted in English.

Lat 341*Roman Literature in Translation (4)**

A survey of Roman literature from the Republic through the Empire, including readings in

Virgil, Plautus, Ovid, Cicero, and Catullus. Conducted in English.

Lat 399**Special Studies (Credit to be arranged.)****Lat 401****Research (Credit to be arranged.)****Lat 404****Cooperative Education/Internship (Credit to be arranged.)****Lat 407****Seminar (Credit to be arranged.)**

Consent of instructor.

Lat 410**Selected Topics (Credit to be arranged.)****Norwegian****Norw 101, 102, 103****First-year Norwegian (4, 4, 4)**

Beginning Norwegian. Emphasis on communication skills: listening, speaking, reading, writing.

Norw 199**Special Studies (Credit to be arranged.)****Norw 201, 202, 203****Second-year Norwegian (4, 4, 4)**

Intensive review of basics introduced in first-year courses and further development of communication skills. Recommended prerequisite: Norw 103.

Norw 299**Special Studies (Credit to be arranged.)****Persian*****Per 101, 102, 103****First-year Persian (4, 4, 4)**

Introduction to spoken and written Persian. Grammar, reading, and simple conversation.

Per 199**Special Studies (Credit to be arranged.)****Per 201, 202, 203****Second-year Persian (4, 4, 4)**

Graded readings in the modern literary language. Conversation and prose composition. Recommended prerequisite: Per 103.

Per 299**Special Studies (Credit to be arranged.)*****Per 301, 302****Third-year Persian (4, 4)**

Reading in literature, composition, expository writing, and conversation. Recommended prerequisite: Per 203.

Per 399**Special Studies (Credit to be arranged.)****Per 401****Research (Credit to be arranged.)**

Consent of instructor.

Per 404**Cooperative Education/Internship (Credit to be arranged.)****Per 409****Practicum (Credit to be arranged.)****Per 410****Selected Topics (Credit to be arranged.)****Portuguese*****Port 101, 102, 103****First-year Portuguese (4, 4, 4)**

An introduction to elementary Portuguese. Emphasis on listening comprehension and oral practice, the elements of grammar, vocabulary building, elementary readings.

Port 199
Special Studies (Credit to be arranged.)

***Port 201, 202, 203**
Second-year Portuguese (4, 4, 4)
Intensive review of basic materials introduced in first-year program and further development of communication skills. Recommended prerequisite: Port 103.

Port 299
Special Studies (Credit to be arranged.)

***Port 301, 302**
Third Year Portuguese (4,4)
Continued work on the Portuguese language. Port 301 emphasizes listening comprehension and speaking, 302 grammatical patterns, reading, and writing. May be taken concurrently. Recommended prerequisite: Port 203.

Port 399
Special Studies (Credit to be arranged.)

Port 404
Cooperative Education/Internship (Credit to be arranged.)

Port 409
Practicum (Credit to be arranged.)

Russian

Rus 101, 102, 103
First-year Russian (4, 4, 4)

An introduction to elementary Russian. Emphasis on listening comprehension and oral practice, the elements of grammar, vocabulary building, and elementary readings.

***Rus 150, 151**
First-year Russian (Intensive) (6, 6)
Two-term course covering the content of Rus 101, 102, 103.

Rus 199
Special Studies (Credit to be arranged.)

Rus 201, 202, 203
Second-year Russian (4, 4, 4)

Intensive review of basic materials introduced in first-year program and further development of communication skills. Recommended prerequisite: Rus 103.

Rus 299
Special Studies (Credit to be arranged.)

Rus 301, 302, 303
Third-year Russian (4, 4, 4)
Focus on acquisition of vocabulary, practical application. Intensive practice in speaking listening, reading and writing. Recommended prerequisite: Rus 203.

***Rus 325**
Russian Phonetics and Phonology (4)
Introduction to the sounds of Russian: their place and manner of articulation (phonetics) as well as how they pattern with respect to each other and as influenced by morphological and syntactic factors (phonology). Conducted in English. Recommended prerequisite: Rus 203.

***Rus 330**
Russian Culture and Civilization (4)
A multimedia survey of major developments in Russian art, architecture, music, dance, theater, cinema and literature. The class focuses on ways major works relate to the artistic atmosphere of their times and on how subsequent generations have reinterpreted and reused them. Taught in English.

Rus 341, 342
Introduction to Russian Literature (4, 4)
Study of selected short stories of the 19th century. For non-native speakers only. Recommended prerequisite: Rus 203.

Rus 399
Special Studies (Credit to be arranged.)

Rus 401/501
Research (Credit to be arranged.)

Rus 404/504
Cooperative Education/Internship (Credit to be arranged.)

Rus 405/505
Reading and Conference (Credit to be arranged.)
Consent of instructor.

Rus 407/507
Seminar (Credit to be arranged.)
Consent of instructor.

Rus 408/508
Workshop (Credit to be arranged.)
Consent of instructor.

Rus 409/509
Practicum (Credit to be arranged.)

Rus 410/510
Selected Topics (Credit to be arranged.)

Rus 411/511, 412/512, 413/513
Advanced Russian (4, 4, 4)
Special problems of Russian grammar; selected writing and reading assignments and discussion. For non-native speakers of Russian only. Recommended prerequisite: Rus 303.

***Rus 416**
Readings in Russian (2)
A variable-content course designed to give advanced students of Russian experience reading in a variety of content areas. Rus 416 is to be taken in conjunction with regularly scheduled corequisite courses. Students taking a corequisite course will do part of the required reading for that course in Russian. Recommended prerequisite: Rus 342.

***Rus 427/527**
Topics in Russian Literature of the 19th Century (4)
Representative literature of the major Russian writers of the nineteenth century. Such topics as Golden Age, or the 19th Century Short Story. Recommended prerequisite: Rus 303.

Rus 433/533
Topics in Russian Literature of the 20th Century (4)
Representative literature of major Russian writers of the twentieth century. Such topics as Soviet Satire, The Thaw, Glasnost. Recommended prerequisite: Rus 303.

***Rus 441/541**
Russian Literature in Translation: Nineteenth Century (4)
Major works of nineteenth-century Russian literature. Readings, lectures, and discussion in English. Recommended prerequisite: Sophomore Inquiry or 4 credits of upper-division literature.

***Rus 442/542**
Russian Literature in Translation: Twentieth Century (4)
Major works of twentieth-century Russian literature. Readings, lectures, and discussions in English. Recommended prerequisite: Sophomore Inquiry or 4 credits of upper-division literature.

***Rus 494/594**
Russian Linguistics (4)
Introduction to the basic concepts of linguistics and their application to Russian. Analysis of the phonetics, phonemics, syntax and morphology of modern Russian. Recommended prerequisite: Rus 303.



Rus 497/597*Applied Russian Linguistics (4)**

A practical application of linguistics to modern Russian. Emphasis on a contrastive analysis of the structures of Russian and English. Recommended prerequisite: Rus 303.

Spanish**Span 101, 102, 103****First-year Spanish (4, 4, 4)**

An introduction to elementary Spanish. Emphasis on listening comprehension and oral practice, the elements of grammar, vocabulary building, and elementary readings.

Span 150, 151**First-year Spanish (Intensive) (6, 6)**

A two-term course covering the content of Span 101, 102, 103.

Span 199**Special Studies (Credit to be arranged.)****Span 201, 202, 203****Second-year Spanish (4, 4, 4)**

Intensive review of basic materials introduced in first-year program and further development of communication skills. Recommended prerequisite: Span 103.

Span 299**Special Studies (Credit to be arranged.)****Span 301, 302****Third-year Spanish (4, 4)**

Continued work on the Spanish language. Span 301 emphasizes listening comprehension and speaking, 302 grammatical patterns, reading, and writing. May be taken concurrently. Recommended prerequisite: Span 203.

Span 325**Spanish Phonetics And Phonology (4)**

Introduction to the sounds of Spanish: their place and manner of articulation (phonetics) as well as how they pattern with respect to each other and as influenced by morphological and syntactic factors (phonology). Recommended prerequisites: Span 301 and 302.

Span 330*Peninsular Culture and Civilization (4)**

Historical development of life, thought, and the arts in Spain. Recommended prerequisites: Span 301 and 302.

Span 331*Latin American Culture and Civilization (4)**

Historical development of life, thought, and the arts in Latin America. Recommended prerequisites: Span 301 and 302.

Span 341, 342, 343**Introduction to Hispanic Literature (4, 4, 4)**

341: Spanish literature from the Middle Ages to the Golden Age. 342: Spanish literature from the 18th century to the present. 343: Latin American literature from the end of the 19th century to the present. Readings from representative texts. Recommended prerequisites: Span 301 and 302.

Span 399**Special Studies (Credit to be arranged.)****Span 401/501****Research (Credit to be arranged.)****Span 404/504 Cooperative Education/internship (Credit to be arranged.)****Span 405/505****Reading and Conference (Credit to be arranged.)**

Consent of instructor.

Span 407/507**Seminar (Credit to be arranged.)**

Consent of instructor.

Span 408/508**Workshop (Credit to be arranged.)**

Consent of instructor.

Span 409/509**Practicum (Credit to be arranged.)****Span 410/510****Selected Topics (Credit to be arranged.)****Span 411/511****Advanced Spanish (4)**

Intensive training in composition, translation, and conversation. May be taken concurrently with Span 414/514. Recommended prerequisite: Span 301 and 302.

Span 414/514**Advanced Spanish Grammar (4)**

A thorough study of grammar and syntax for major and prospective teachers. May be taken concurrently with Span 411/511. Recommended prerequisites: Span 301 and 302.

Span 421/521*Major Topics: Peninsular Prose (4)**

Study, analysis, and critique of major prose works of Spain by authors such as Fernando de Rojas, Cervantes, Galdós, Unamuno, and Goytisolo. Recommended prerequisites: 8 credits of Span 341, 342, or 343.

Span 422/522*Major Topics: Peninsular Drama (4)**

Study, analysis, and critique of major dramatic works of Spain by authors such as Lope de Vega, Tirso de Molina, Calderón de la Barca, Zorrilla, García Lorca, and Buero Vallejo. Recommended prerequisites: 8 credits of Span 341, 342, or 343.

Span 423/523*Major Topics: Peninsular Poetry (4)**

Study, analysis, and critique of the poetry of Spain by authors such as Berceo, Góngora, Quevedo, Machado, Jimenez, and Cernuda. Recommended prerequisites: 8 credits of Span 341, 342, or 343.

Span 427/527*Major Topics: Latin American Prose (4)**

Study, analysis, and critique of major prose works of Latin America by authors such as García Marquez, Fuentes, Paz, Vargas Llosa, Mastretta, and Borges. Recommended prerequisite: 8 credits of Span 341, 342, or 343.

Span 428/528*Major Topics: Latin American Drama (4)**

Study, analysis, and critique of major dramatic works of Latin America by authors such as Gambaro, Benedetti, Usgil, D'az, and de la Parra. Recommended prerequisite: 8 credits of Span 341, 342, or 343.

Span 429/529*Major Topics: Latin American Poetry (4)**

Study, analysis, and critique of major prose works of Latin America, by authors such as Darío, Huidobro, Vallejo, Neruda, Guillen, and Mistral. Recommended prerequisite: 8 credits of Span 341, 342, or 343.

Span 441/541*Major Works in Translation (4)**

Study of selections from masterpieces in translation by authors such as Cervantes, Neruda, Borges, Lispector, and García Marquez. Readings, lectures, and discussions in English. Recommended prerequisite: 4 credits of upper-division literature.

Span 434/534*Major Topics: Peninsular Multiple Genres (4)**

Study, analysis, and critique of works in multiple genres on such topics as Medieval Literature, the Celestina, Women Writers, Cine-Lit, Literature of

the Franco Years, the Poetry & Drama of García Lorca, and the Generation of '98. Course may be repeated for credit when topics vary.

Recommended prerequisites: at least 8 credits of Span 341, 342, or 343.

Span 436/536*Major Topics: Latin American Multiple Genres (4)**

Study, analysis, and critique of works in multiple genres on such topics as Transvestism, Feminism, Sickness & Literature, CineLit, Prose & Poetry of Borges, and Pre-Colombian Literature. Course may be repeated for credit when topics vary. Recommended prerequisites: at least 8 credits of Span 341, 342, or 343.

Span 490/590*History of the Spanish Language (4)**

Study of the development of the Spanish language in terms of phonological, morphological, and syntactical changes. Recommended prerequisite: Span 301, 302, 325.

Span 494/594*Spanish Linguistics (4)**

Introduction to the basic concepts of linguistics and their application to the Spanish language. Emphasis on practical analysis of the sound system and the grammatical system. Brief survey of the historical development, followed by an analysis of the phonetics, phonemics, morphology, and syntax of modern Spanish. Must be taken in sequence. Recommended prerequisite: Span 301, 302, and 4 credits of linguistics.

Span 497/597*Applied Spanish Linguistics (4)**

A practical application of linguistics to modern Spanish. Emphasis on a contrastive analysis of the structure of Spanish and English. Recommended prerequisites: Span 301, 302, and 4 credits of linguistics.

Span 503**Thesis (Credit to be arranged.)*****Span 551****Hispanic Poetry (4)**

Critical study of the lyric poetry of Latin America and/or Spain.

Span 552*Hispanic Drama (4)**

Critical study of representative works of Latin American and/or Spanish drama.

Span 553*Hispanic Prose (4)**

Critical study of representative works of the prose of Latin America and/or Spain.

*** Swedish*****Swed 101, 102, 103****First-year Swedish (4, 4, 4)**

Beginning Swedish. Emphasis on communication skills: listening, speaking, reading, writing.

Swed 199**Special Studies (Credit to be arranged.)*****Swed 201, 202, 203****Second-year Swedish (4, 4, 4)**

Intensive review of basics introduced in first-year courses and further development of communication skills. Recommended prerequisite: Swed 103.

Swed 299**Special Studies (Credit to be arranged.)**

Swahili

Swah 101, 102, 103
First Year Swahili (4, 4, 4)

Introduction to elementary Swahili. Emphasis on listening comprehension, and oral practice, the elements of grammar, vocabulary building, and elementary readings.

Swah 201, 202, 203
Second Year Swahili (4, 4, 4)

Intensive review of basic materials introduced in first year program and further development of communication skills. Recommended prerequisite: Swah 103.

Turkish

Tur 101, 102, 103
First-year Turkish (4, 4, 4)

Introduction to Turkish. Emphasis on elements of grammar, vocabulary building, and conversation. Elementary reading.

Tur 199
Special Studies (Credit to be arranged.)

Tur 201, 202, 203
Second-year Turkish (4, 4, 4)

Intense review of materials introduced in first-year course and further development of communicative skill and reading comprehension. Elementary writing. Recommended prerequisite: Tur 103.

Tur 299
Special Studies (Credit to be arranged.)

***Tur 301, 302, 303**
Third-year Turkish (4, 4, 4)

Composition, conversation, readings in literature, and grammar review. Recommended prerequisite: Tur 203.

Tur 330
Topics in Turkish Culture and Literature (4)

Development of Turkish life, thought, and arts from the late-Ottoman to contemporary period. Topics may include Westernization, emergence of journalism, influence of the French revolution, national literature, urbanization, "guest workers" in Europe, feminist revival, Marxism, Islamism, and popular culture. Conducted in English. This course may be taken twice for credit with different topics.

tion, national literature, urbanization, "guest workers" in Europe, feminist revival, Marxism, Islamism, and popular culture. Conducted in English. This course may be taken twice for credit with different topics.

Tur 341
Turkish Literature in Translation (4)

Study of texts representative of major Turkish authors, themes or genres from the modern period in translation. Examples are modern drama, realism, autobiography, contemporary novel. Conducted in English.

Tur 399
Special Studies (Credit to be arranged.)

Tur 401
Research (Credit to be arranged.)
 Consent of instructor.

Tur 404
Cooperative Education/Internship (Credit to be arranged.)

Tur 410
Selected Topics (Credit to be arranged.)

General Studies/ Liberal Studies

491E Neuberger Hall
 503-725-3822

B.A., B.S.
Arts and Letters, Science, Social Science and Liberal Studies
M.A.T., M.S.T. (Science, Social Science)

Programs which are of an interdisciplinary nature and which do not conveniently fit within the normal department areas are listed under General Studies.

Students interested in one of these interdisciplinary fields will complete their major requirements by taking a concentration of courses in the arts and letters or science or social science academic area. There are no specific courses required for the major. To take full advantage of the opportunities afforded this major, students should plan a program which includes a coherent set of courses providing an in-depth study in the area of special interest as well as providing for enhancement of the student's problem-solving and communication skills.

Undergraduate program

Advisers: K. DeVoll, L. Marsh, F. McClurken-Talley

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major in arts and letters, science, or social science. The arts and letters academic distribution area consists of courses taken in applied linguistics, architecture, art, black studies (BSt 221, 351, 352, 353, 421, 424, 425, 426, 427 only), chicano/latino studies (ChLa 302, 330, 411, 414 only) communications, English, foreign languages and literatures, music, philosophy, and theater arts.

The science academic distribution area consists of courses taken in biology, chemistry, environmental studies, geology, mathematics/statistics, physics, and science education.

The social science academic distribution area consists of courses taken in administration of justice (AJ 220 and 330 only), anthropology, black studies (except Bst 221, 351, 352, 353, 421, 424, 425, 426, 427), chicano/latino studies (ChLa 201, 301, 303, 375, 380, 399, 450 only), child and family studies, economics, geography, history, international studies, political science, psychology, sociology, urban studies and planning, and women's studies.

In addition to meeting all of the nonmajor and general education baccalaureate degree requirements, a student in one of the above majors must complete 52 credits in one of the following areas: arts and letters or science or social science. A minimum of 32 of the 52 credits must be upper-division with at least 8 upper-division credits in *each of two* departments. In addition to 52 credits, all students must take Wr 323 or a Writing Intensive course.

	Credits
Upper-division credits from one department in the major academic area	8
Upper-division credits from a second department in the major academic area	8
Additional upper-division credits from any department(s) in the major academic area	16
Additional credits in the major academic area	20
	Total 52

Courses used to satisfy the major requirements, whether taken at PSU or elsewhere, must be graded C- or above. A maximum of 12 credits may be graded P.

Requirements for major in liberal studies. A student majoring in liberal studies must complete the general University requirements (except general education requirements), either Wr 323 or an approved Writing Intensive Course, and the following requirements for the liberal studies major:

	Credits
Upper-division credits from the arts and letters (except Wr 323), science and/or social science academic distribution area(s)	81

Courses used to satisfy the major requirements, whether taken at PSU or elsewhere, must be graded C- or above. A maximum of 12 credits may be graded P.

Students majoring in Liberal Studies and also in a second major must meet the general education requirement and the upper-division requirement in the academic distribution areas for the second major.

Education programs

The professional education program for teacher licensure is to be completed after the student has a bachelor's degree. It is highly recommended that students major in the subject they want to teach, or complete as part of their bachelor's degree a set of courses appropriate for the subject to be taught and the level at which the student wants to teach. Students who already have a bachelor's degree should see an adviser before taking additional courses. Additional information about undergraduate preparation for the Graduate Teacher Education Program (GTEP) may be found under the preprofessional listing on page 225.

Elementary

Adviser: **K. DeVoll**

Students who want to be elementary teachers should major in one of the departments in the arts and letters, sciences, or social sciences areas or in arts and letters, science, or social science. It is highly recommended that the following courses be included in the undergraduate program. A course from two of the following departments: Anthropology, Black Studies, Sociology, Women's Studies (Anth 103, BSt 302, Soc 337, WS 101) is recommended.

†Art 312

Bi 101/104, 102/105, 103/106 or Sci 201, 320, 350

G 201/204, 202/205

G 355

A course from Economics (Ec 201 is recommended)

Ed 420 Introduction to Education and Society

Geography—two courses from the following:

Geog 210, 230, 346, 350

Hst 201, 202

Literature—8 credits

†Children's Literature - Lib 428 or Eng 308 Golden Age of Children's Literature

†Mth 211, 212

†Mus 381 or approved alternates

A course from Political Science (PS 101 recommended)

Psy 200 or 204

†Psy 311

Sci 311 and 312

Sp 100, 215, 220, 324, 329, or SpHr 262

SpEd 199 or 410 Careers in Special Education

Courses in the recommended program are to be taken for differentiated grades; exceptions are to be approved by the

adviser. Students must have at least a 3.00 GPA in the recommended program and earn at least a C- in each course of the recommended program.

Courses having multicultural and multi-ethnic content or approach should be included in the preprofessional program.

Integrated Science

Advisers: **M. Cummings**

The integrated science endorsement is valid for teaching all science except biology, chemistry, or physics and, thus, is the endorsement for teaching science in middle and intermediate schools a major in general studies in science with an integrated science endorsement must include the following courses:

Required courses	Credits
Stat 243 Introduction to Probability and Statistics I	4
G 201, 202 Geology	6
G 204, 205 (may substitute one G 200) Geology Lab	2
G 351 Introduction to Oceanography	4
G 452 Geology of the Oregon Country.....	4
ESR 150 Environmental Studies Orientation.....	1
ESR 220 Introduction to Environmental Systems....	4
ESR 355 Understanding the Environment.....	4
Ph 121 General Astronomy	4
Bi 251, 252, 253.....	15
Ch 221, 222, 223, 227, 228, 229 or Ph 201, 202, 203, 204, 205, 206	15-16
Geog 311 Climatology	4
Psy 200 or 204, Psy 311	8
Ed 420 Intro to Education and Society.....	4
Electives—Select from the following:	8
Bi 360, 361 Marine Biology (4)	
Bi 357 General Ecology (4)	
Bi 341 Introduction to Genetics (4)	
G 312 Mineralogy (5)	
G 454 Cascade Volcanoes (2)	
G 455 Minerals in World Affairs (4)	
G 456 Astrogeology (4)	
ESR 221 Applied Environmental Studies: Problem Solving (4)	
ESR 222 Applied Environmental Studies: Science and Policy (4)	
ESR 320 Analysis of Environmental Systems I (4)	
ESR 321 Analysis of Environmental Systems II (4)	
Ph 122 General Astronomy (4)	
Ph 367 Cosmology (4)	
Total	87-88

Basic Social Studies

Adviser: **K. DeVoll**

Students who major in social science (or in anthropology, economics, geography, history, political science, psychology, or sociology) and wish to teach social studies in secondary schools are recommended to include the following courses in their undergraduate program:

Social Studies Endorsement	Credits
Ec 201, 202 Principles of Economics	8
Geog 210 Physical Geography	4
Hst 101, 102 Western Civilization.....	8
Hst 201, 202 History of the United States.....	8
PS 101, 102 United States Government.....	8

PS 204 Comparative Politics	4
Psy 200 or 204, Psy 311 Human Development	8
Anth 101, 102, 103 Introductory Anthropology; or BSt 302 African American Experience in the 20th Century, BSt 424 African American/African Culture in Cinema; or Soc 200 General Sociology; or WS 101 Introduction to Women's Studies, WS 342 History of Feminism	8
BSt 412 Oregon African American History, or Soc 337 Minorities, or Sp 115 Introduction to Intercultural Communication.....	4
Sp 100, 220, 324, 329, or SpHr 262	4
Ed 420 Introduction to Education and Society.....	4
Concentration in Economics, Geography, History, or Political Science.....	12

Students must complete a minimum of 8 credits in each of the following areas to receive a departmental recommendation to the GTEP: history, geography, economics, and political science.

Courses are to be taken for differentiated grades. Students must have at least a 3.00 GPA in the recommended courses and must earn at least a C- in each course.

Equivalent courses sometimes are accepted in substitution for certain of those specified, upon prior approval of the social studies secondary adviser.

Graduate programs

Admission requirements

Standard Teaching License. The College of Liberal Arts and Sciences offers graduate work leading to the Standard Secondary Teaching License. Appropriately prepared students may complete the requirements for the Standard Secondary License and for a Master of Arts in Teaching or a Master of Science in Teaching at the same time. The requirements for the Standard Secondary Teaching License include previous completion of the requirements for a bachelor's degree and for a basic secondary license; admission as a graduate student (see page 62); 45 credits of upper-division or graduate work subsequent to receipt of the bachelor's degree; completion of a standard endorsement or two basic endorsements other than combined endorsements; 15 credits (of the 45 credits) to be approved education courses; 15 credits for the endorsement(s) to be at the graduate level; and two years of successful teaching experience in Oregon schools while holding a basic teaching license. See page 225 for the required education courses.

Standard Social Studies Endorsement. The requirements for the Standard Social Studies Endorsement include at least 24 upper-division or graduate level credits in social science in addition to those

† Indicates courses that fulfill prerequisites to certain courses in the professional program in the Graduate School of Education and that must be completed before the deadline date for application to the Graduate School of Education.

required for the Basic Secondary Teaching License and the Basic Social Studies Endorsement. At least 15 of these credits must be at the graduate level. Combined undergraduate and graduate preparation should include at least 36 credits in one of the following: anthropology, economics, geography, history, political science, or sociology. No specified courses are required for the standard endorsement. Each student's program is tailored to meet the needs of the individual and the requirements of the standard endorsement and the standard license.

Other standard endorsements. See the appropriate department for the requirements for other standard endorsements.

Master of Arts in Teaching or Master of Science in Teaching. The College offers the degrees of Master of Arts in Teaching and Master of Science in Teaching with a major in English (M.A.T. only), social science, mathematics, science, science/biology, science/chemistry, and science/geology.

Degree requirements

Master of Arts in Teaching or Master of Science in Teaching. University master's degree requirements are listed on page 70. Major requirements are:

Social Science. The student's program must include a minimum of 45 credits in approved graduate credits, to include a minimum of 30 credits in the social science area (economics, geography, history, political science, and sociology), and at least 9 but not more than 15 credits in education courses. Of the minimum 30 credits in social sciences, 12 credits must be earned in each of two fields of concentration; a maximum of 12 combined credits may be in courses numbered 501 and 505. Students electing the thesis option must take a minimum of 6 and a maximum of 9 credits of 503. With consent of the adviser, the two fields may be within a single social science department.

Students may elect a thesis or nonthesis (two research papers or equivalent) pro-

gram. The adviser, in cooperation with an appropriate faculty member, will establish standards for thesis and research paper requirements for students working in more than one department. All students, whether in a thesis or nonthesis program, must satisfactorily complete the course of study and pass both written and final oral examinations in both the social science fields of study as well as in education.

Science. In consultation with the graduate adviser, the student should establish the degree program before the completion of 15 credits of course-work. The program must include a minimum of 45 credits in approved graduate courses, to include a minimum of 24 credits in the science area (biology, chemistry, geology, mathematical sciences, and physics). At least 9, but not more than 15 credits, must be in education courses. In order to fulfill requirements for the degree, the student must satisfactorily complete the degree program and pass both a final written and a final oral examination.

Geography

424 Cramer Hall
725-3916
www.geog.pdx.edu/

B.A., B.S.

Minor

Secondary Education Program-Social Science

M.A., M.S.

M.A.T. and M.S.T. (General Social Science)

Ph.D.—Environmental Sciences and Resources: Geography

Ph.D.—Participating department in Urban Studies Doctoral Program

Undergraduate programs

Geography is concerned with the earth's thin film of life—the biosphere—and with the location of things: what accounts for the great clusters of population and for the empty areas, the forests and the cutover, the cities, villages, and roads.

The geography program leads the student to an appreciation and understanding of the human environment on world, regional, and local scales; and provides background and requisite training for careers in resource, planning, environmental, or education fields. Geography majors are involved with activities such as

urban planning and problem solving, map design, graphic reproduction and display, statistical analysis, field study in Pacific Northwest mountains and deserts, and regional studies.

Through sharing of staff, the Department of Geography is affiliated with the College of Urban and Public Affairs, International Studies, and the PSU Center for Population Research and Census, Environmental Sciences and Resources, and other departments on campus.

The Department of Geography informs majors about internships in public agencies and businesses in such fields as planning, environmental management, GIS, or cartography. Students may earn up to 12 credits of practicum credit while they gain insights into applications of the knowledge they are gaining in the University. Student assistantships are also available, providing part-time employment.

Majors in geography may obtain information on the Geography Honors Option in the departmental office.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. In addition to meeting the general University degree requirements, the major in geography must complete at least 60 credits in geography courses, including 12 credits in each of the following areas: geographic skills, physical geography, regional geography, and human geography—as detailed below. Of the courses presented for the major, 12 credits are in required courses (Geog 210, 230, and 380) and a minimum of 16 credits must be at the 400-level. Geog 230 may be counted for human or regional geography, but not for both. Geog 497, or Stat 243 and Stat 244, or equivalent required for the B.S. degree.

	Credits
Physical Geography:.....	12
Geog 210 Physical Geography (4) required	
Geog 310 Climate and Water Resources (4)	
Geog 311 Climatology (4)	
Geog 312 Climatic Variability (4)	
Geog 313 Biogeography (4)	
Geog 320 Geomorphic Processes (4)	
Geog 322 Alpine Environments (4)	
Geog 407 Seminar in Physical Geography(4)	
Geog 411 Climatic Analysis (4)	
Geog 413 Biogeography of the Pacific Northwest (4)	
Geog 414 Hydrology (4)	
Geog 415 Soils and Land Use (4)	
Geog 418 Advanced Topics in Biogeography (4)	
Geographic Skills:.....	12
Geog 380 Maps and Geographic Information (5) required	

Geog 397 Visualization of Spatial Data (4)	
Geog 407 Seminar in Research Skills (4)	
Geog 420 Field Methods in Physical Geography (4)	
Geog 475 Digital Compilation and Database Design (4)	
Geog 480 Visual Image Analysis (4)	
Geog 481 Satellite Image Processing (4)	
Geog 482 Satellite Image Classification and Change Detection (4)	
Geog 485 Map Design and Production (4)	
Geog 488 Geographic Information Systems I: Introduction (4)	
Geog 489 Building a GIS Database with GPS (4)	
Geog 492 Geographic Information Systems II: Advanced GIS (4)	
Geog 494 GIS for Water Resources	
Geog 495 Maps and Models (4)	
Geog 497 Spatial Quantitative Analysis (4)	
Regional Geography:.....	12
Geog 230 Environment and Society: Global Perspectives (4) required	
Geog 350 Geography of World Affairs (4)	
Geog 351 Pacific Northwest (4)	
Geog 352 The Himalaya and Tibet (4)	
Geog 353 Pacific Rim (4)	
Geog 354 Europe (4)	
Geog 356 Russia and Its Neighbors (4)	
Geog 360 Latin America (4)	
Geog 363 Africa (4)	
Geog 364 The Middle East (4)	
Geog 366 Historical Geography of North America (4)	
Geog 368 United States and Canada (4)	
Geog 407 Seminar in Regional Geography (4)	
Geog 450 Geography of Portland (4)	
Geog 453 Japan (4)	
Human Geography:.....	12
Geog 230 Environment and Society: Global Perspectives (4) required	
Geog 331 Economic Geography (4)	
Geog 332 Urban Geography (4)	
Geog 345 Resource Management (4)	
Geog 346 World Population and Food Supply (4)	
Geog 347 Environmental Issues and Actions (4)	
Geog 348 Cultural Ecology (4)	
Geog 349 Mountain Geography (4)	
Geog 407 Seminar in Human Geography (4)	
Geog 430 Cultural Geography (4)	
Geog 432 Urban Landscapes (4)	
Geog 442 Sustainable Cities (4)	
Geog 445 Resource Management Topics (4)	
Geog 446 Water Resource Management (4)	
Geog 447 Urban Streams (4)	
Geog 448 The Urban Forest (4)	
Geog 462 Sense of Place (4)	
Geography Electives	12
Total credits in geography (minimum)	60

	Credits
Geog 210 Physical Geography	4
Geog 230 Environment and Society: Global Perspectives	4
Geog 380 Maps and Geographic Information.....	4
Geography electives (upper-division).....	16
Total (minimum)	28

All courses used to satisfy the departmental minor requirements must be graded C- or above.

SECONDARY EDUCATION PROGRAM

Adviser: **See department chair**
(See General Studies: Social Science page 142)

Graduate programs

The Department of Geography offers the degrees of Master of Arts, Master of Science, Master of Arts in Teaching, and Master of Science in Teaching (General Social Science). The department also participates in the Environmental Sciences and Resources Ph.D. program, see page 127.

Areas of primary concentration are urban geography, physical geography, resource management, culture, environment and society, GIS, and cartography. The M.A. and M.S. degrees are in part designed to meet the needs of students preparing for careers in research or administration in government and industry, urban and regional planning, and in secondary education and community college teaching. The M.A. and M.S. degrees also provide a predoctoral program in geography for students planning to take advanced work leading to professional careers in university teaching, research, or public service. Students are encouraged to follow a program that combines breadth of knowledge with depth in one field of interest.

Admission requirements

For admission to graduate study for the M.A. and M.S. degrees, a student normally should have completed the minimum preparation for an undergraduate major in geography with a 3.00 grade point average in all work. Students with majors in other fields are encouraged to apply. Normally such students are admitted on a conditional basis, with the student required to take courses to remedy deficiencies.

In addition to the general University admission requirements for advanced degrees the student must provide the Graduate Record Examination scores and letters of recommendation from three faculty members of colleges previously attended.

Degree requirements

University master's degree requirements are listed on page 70. Specific departmental requirements are listed below.

Master of Arts or Master of Science. The student will plan a program of study with an adviser and other members of the supervisory committee during the first term of residence.

The program of study must include a minimum of 30 graduate credits in geography for the thesis option or 36 for the nonthesis option, including the following: Geog 521 and Geog 522. All graduate students are encouraged to attend the department's colloquia.

Students seeking the M.A. degree must demonstrate their competence in the use of a foreign language for geographic research; those preparing for an M.S. degree must show proficiency in advanced skills in geography or an equivalent research technique (8 credits).

Students in the M.A. program must complete a thesis. Those in the M.S. program may choose between thesis and nonthesis options. The thesis option is appropriate for students intending to pursue Ph.D. studies, whereas the nonthesis option is designed for students who are preparing for careers in such areas as government service or private industry. Candidates who elect to write a thesis take a minimum of 45 credits including 6 credits in Geography Thesis. The thesis option requires the presentation of the student's independent research into a topic approved by the student's graduate committee. It normally involves field work and is an original contribution to knowledge in the field of geography. A final oral examination by the student's committee includes defense of the thesis.

Candidates electing the nonthesis option take a minimum of 54 credits. Two 2-credit sections of 501 Research are undertaken to rewrite, edit, and revise two papers, at least one of which must evolve from graduate coursework in geography at PSU. A final oral presentation of one of the papers is required for completion of the degree.

Foreign students for whom English is a second language must present a score of at least 550 (paper-based) or 213 (computer-based) in the Test of English as a Foreign Language (TOEFL) with their application for admission.

Master of Arts in Teaching or Master of Science in Teaching. For information on the Master of Arts in Teaching and the Master of Science in Teaching (General Social Science), see page 144.

Course taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling department major requirements. Geog 230 may be taken for either human geography or regional geography, but not both.

All courses used to satisfy the departmental major requirements must be graded C- or above.

Requirements for a minor. To earn a minor in geography a student must complete a minimum of 28 credits in geography (at least 12 credits of which must be taken in residence at Portland State University, and 16 credits of which must be upper-division), to include the following:

Courses

Courses with an asterisk (*) are not offered every year.

Geog 199 **Special Studies (Credit to be arranged.)**

Geog 210 **Physical Geography (4)**

An introduction to the physical elements of geography and the environment in which people live. The focus is on natural processes that create physical diversity on the earth. Major topics are weather and climate, vegetation and soils, landforms, ecosystems, their distribution and significance.

Geog 230 **Environment and Society: Global Perspectives (4)**

An introduction to the ways in which humans, acting through social constraints and structures, have lived in and modified their environment. The spatial patterns produced from human activities (such as population growth, transportation systems, urban structure, economic development, resource use and management, and the evolution of political patterns) are considered in a global context. Case studies from several world regions illustrate the processes by which humans modify their world to create distinctive cultural landscapes.

Geog 240 **Geography of Wine (4)**

Core geographic concepts and themes through the framework of the geography of wine. Exploration of the physical and cultural dimension of grape-growing and wine-making, ranging from historical geography to climate and climate change and cultural geography.

***Geog 310** **Climate and Water Resources (4)**

An inquiry-based examination of the principal controls on climate and hydrology, with emphasis on processes and interactions; students will do fieldwork, data analysis, and laboratory work. Recommended prerequisite: Natural Science Inquiry. Also listed as Sci 333; course may be taken only once for credit.

Geog 311 **Climatology (4)**

A study of the physical processes which comprise the climatic system, from the global scale to the local scale. Particular attention is given to the nature of climatic variability, its causes, and its implications for human activity. Recommended prerequisite: Geog 210.

***Geog 312** **Climate Variability (4)**

Examines the role of climate variability in the Pacific Northwest, including the nature of natural and human-induced variability and the effects on water resources of the region. Students will learn by gathering data, analyzing the data, and reporting on their results. Reading and discussion will accompany the data/laboratory portions of the course. Includes laboratory and/or fieldwork. Recommended prerequisite: Natural Science Inquiry. Also listed as Sci 334; course may be taken only once for credit.

Geog 313 **Biogeography (4)**

The study of the distribution and characteristics of major plant/animal communities and soil types on a global scale. Interrelationships

between organisms and their environment are stressed, as is the role of human populations in the maintenance and future of these environments. There is a full-day field trip across the Cascades to study changing vegetation types. Prerequisite: Geog 210.

Geog 314 **Severe Weather (4)**

Examination of severe and hazardous weather processes such as hurricanes, tornadoes, and thunderstorms. Evaluation of the human-environment interaction of severe weather and the potential consequences of global climate change on the intensity and location of severe weather phenomena. Recommended prerequisite: Geog 210.

Geog 320 **Geomorphic Processes (4)**

Study of landform processes at the earth's surface including the work of water, wind, and ice in erosion, transportation, and deposition on land and sea. The significance of geomorphic processes to human activities is included. A one- to two-day weekend field trip is required. Three lectures; one 3-hour lab. Recommended prerequisites: Geog 210 and Mth 111.

Geog 321 **Mt. Hood (4)**

Examines the physical and cultural systems that shape Mt. Hood and investigates some of the issues that arise when a mostly wild mountain abuts an urban area. Class involves lecture, discussion, research, and field trips.

Geog 322 **Alpine Environments (4)**

Examines the geoeology of high elevation environments in tropical, mid-latitude, and high altitude regions with a special emphasis on the alpine environment of the Pacific Northwest. The primary objective is to promote understanding of the features and processes found in alpine areas including their susceptibility to human alteration. Topics include an examination of high elevation weather and climate, geomorphology, vegetation, soils, fauna, and physical adaptations of humans to alpine conditions. Recommended prerequisite: Geog 210.

***Geog 331** **Economic Geography (4)**

An introduction to theories and methods of locational analysis of economic activities within agriculture, manufacturing and selected services. The course focuses on North America and includes geographic distributions, areal interaction among urban and regional economies, the processes of regional economic development, and international economic linkages. Recommended prerequisite: upper-division standing.

Geog 332 **Urban Geography (4)**

Introduction to the geographical factors affecting the development of the modern city. Topics include urban systems and the location of cities; residential, commercial, and industrial structure; social and physical characteristics of cities; the built environment; the urban economy; and planning the urban environment. Recommended prerequisite: upper-division standing.

Geog 345 **Resource Management (4)**

Survey of natural resources, their occurrence, and their management. Primary focus will be

on the United States, with case studies from other countries and regions. Recommended prerequisite: upper-division standing.

Geog 346 **World Population and Food Supply (4)**

An introduction to the dynamics of the current national and international problems associated with rapid population growth, unemployment, major population migrations, shortages of food and other critical commodities, and the present and potential adjustments to these situations. Recommended prerequisite: upper-division standing.

Geog 347 **Environmental Issues and Action (4)**

Examines environmentalism as a phenomenon reflecting cultural appraisals of nature and society's relationship to it. Explores the history and ideology of the environmental movement, and investigates the contemporary structure, concerns, effects, critiques, and directions of environmentalism. Recommended prerequisite: upper-division standing.

Geog 348 **Cultural Ecology (4)**

Introduction to geographic perspectives on cultural ecology. Investigates cultural adaptation and environmental change from an ecological perspective, focusing on biomes and cultural adaptations within them. Particular attention to traditional societies and the impacts of development. Recommended prerequisite: upper-division standing.

Geog 349 **Mountain Geography (4)**

Investigates mountain environments as distinctive biophysical and cultural realms. Surveys the human occupation and use of mountainous areas of Eurasia, Africa, the Pacific, and the Americas, and explores highland-lowland interactions in selected cases. Topics include cultural adaptation, mountain resource management and policy, and developments and its impacts in highland environments.

Geog 350 **Geography of World Affairs (4)**

Examines the major world trouble spots in light of long-standing political-geographical rivalries, including ethnic group rivalries, economic disparities, and conflicting historical claims. Particular emphasis will be placed on political organization of territory, nationalism, boundary conflicts, colonialism, and, where relevant, metropolitan political fragmentation. Recommended prerequisite: upper-division standing.

Geog 351 **Pacific Northwest (4)**

Study of the Pacific Northwest as a region of the United States. Overview of the region and its relationship to other parts of the world will be followed by an analysis of the physical environment, natural resources, agriculture, manufacturing, transportation, population, and urban development. Special attention will be paid to theoretical developments in contemporary regional geography issues. Recommended prerequisite: upper-division standing.

Geog 352 **The Himalaya and Tibet (4)**

Survey of the physical and cultural landscapes of the Himalaya-Hindukush and the Tibetan

Plateau. It investigates not only the places and peoples within it but also ideas about it and their influence on its history and present situation.

**Geog 353
Pacific Rim (4)**

Provides a comprehensive look at the events and people shaping the last 150 years of Asia-Pacific history and relates them to Pacific Basin relationships today. Reveals how, from the 19th century onward, modern nations have emerged from the rich and varied cultures and society of Pacific Asia. Particular emphasis is placed on political and economic geography of East Asia in relation to contemporary American and Japanese interests in the region. Recommended prerequisite: upper-division standing.

**Geog 354
Europe (4)**

Focuses on the changing economic and political geography of Europe, post World War II, and the adjustments to changing world conditions. Analysis of the geographic conditions of individual countries. Examines their population, urban and rural settlements, physical geography, agriculture, and industry. Recommended prerequisite: upper-division standing.

**Geog 355
Landscapes of Spain (4)**

Study of the landscapes of Spain, both the physical and the cultural, and the search for unity in a nation long characterized by diversity. Overview of the climate and topography, the historical development of regional distinctions, and the cultural and political conditions that shape the nation in the 21st century. Recommended prerequisite: upper-division standing.

***Geog 356
Russia and Its Neighbors (4)**

An exploration of the USSR by topic and region. The course looks at the nature and significance of the country's huge size and diversified physical environment; examines the origins and implications of its multinational character; and analyses patterns of agricultural production and industry, with consideration of the distinctive institutions that have shaped them.

**Geog 360
Latin America (4)**

Analysis of changing landscapes and lifeways in Latin America. The focus is on physical, cultural, and economic forces that have interacted to create a distinctive world region. Particular attention is given to the impact of large scale issues such as global climate change, trade, the environment, and the debt crisis on the lands and lives of everyday people in the region. Recommended prerequisite: upper-division standing.

***Geog 363
Africa (4)**

A survey course on the physical and human geography of the continent of Africa, focusing on the variability of the physical landscape, including geomorphology, vegetation, and climate and on the patterns and implications of cultural diversity. Examines links between natural resources, economic development, and environmental management on location, national and regional scales. Case studies from various countries and regions will be used.

***Geog 364
The Middle East (4)**

A survey of the physical and cultural landscapes of southwestern Asia and North Africa, emphasizing the interaction of environmental factors and dynamic economic and political forces in the region as a whole. Problems common to the nations of the region are examined, including the difficulties of political cohesion, urbanization, and ecological impacts of tradition and contemporary land-use practices. Recommended prerequisite: upper-division standing.

***Geog 366
Historical Geography of North America (4)**

Survey of the evolving geography of North America during the last four centuries; the formation and growth of regions from the initial period of European exploration and colonization to the present. Topics include the acquisition of geographical knowledge; cultural transfer and acculturation; westward expansion; resource exploitation; regional and national integration; and landscape change.

Recommended prerequisite: upper-division standing.

**Geog 368
United States and Canada (4)**

Survey of the contemporary regional geography of the United States and Canada including physical environments, cultural landscapes, and economic activities. Topics will include the development of distinctive regions; the changing spatial relationships between the location of resources and population; urban/rural disparities; and national and regional roles in the global economy. Recommended prerequisite: upper-division standing.

**Geog 380
Maps and Geographic Information (5)**

Examines maps as communicative tools, analytical devices, and cultural artifacts. Fundamental concepts such as scale, projection, coordinate systems, are reviewed and applied to higher level measurement and analytical methods with thematic and topographic maps. The data requirements and information content of maps are considered with respect to emerging digital geo-spatial technology.

**Geog 399
Special Studies (Credit to be arranged.)**

**Geog 401/501
Research (Credit to be arranged.)**

Consent of instructor.

**Geog 403/503
Thesis (Credit to be arranged.)**

Consent of instructor.

**Geog 404/504
Cooperative Education/Internship (Credit to be arranged.)**

Geog 404 Pass/no pass only. Consent of instructor.

**Geog 405/505
Reading and Conference (Credit to be arranged.)**

Consent of instructor.

**Geog 407/507
Seminar (Credit to be arranged.)**

**Geog 409/509
Practicum (Credit to be arranged.)**

Geog 409 Pass/no pass only. Consent of instructor.

**Geog 410/510
Selected Topics (Credit to be arranged.)**

**Geog 411/511
Climatic Analysis (4)**

Nature of climatic data sets, methods of acquisition, and techniques of analysis. The emphasis will be on the study of climate variability and its implications for the management of natural resources. Recommended prerequisites: Geog 311 and Stat 243 and 244.

***Geog 413/513
Biogeography of Pacific Northwest (4)**

Study of the character and distribution of natural environments of the Pacific Northwest with focus on vegetation, wildlife, and soils. Classical problems in biogeography are discussed, e.g., origin of grasslands, and relationship between needleleaf and broadleaf forests. Vegetation types are studied within the context of climatic climax zones. There are two half-day and two full-day field trips. Prerequisite: Geog 210, 313 and Bio 357.

**Geog 414/514
Hydrology (4)**

A detailed analysis of the physical processes of the hydrologic cycle, emphasizing an applied approach for the purposes of resource management and environmental analysis: precipitation, runoff processes, evapotranspiration, soil water, flooding and floodplain utilization, and techniques of hydrologic data analysis. Recommended prerequisites: Geog 210 and Stat 243 and 244.

***Geog 415/515
Soils and Land Use (4)**

The origin, development and distribution of soils and the significance of soil to man. Examines the importance of soil to landforms, vegetation, and ecological development. Major emphasis is given to land use potentials and limitations on various kinds of soils with focus on urban and agricultural settings. There are two half-day field trips. Recommended prerequisite: Geog 210.

***Geog 418/518
Advanced Topics in Biogeography (4)**

Seminar course examines new developments in biogeography and their relationship to established biogeographic theory. Each offering will investigate one or more advanced topics in biogeography such as vegetation dynamics (plant succession and disturbance), island biogeographic theory, biodiversity, and ecotones, ecoclines, and edges. May be repeated with different topics. Recommended prerequisites: Geog 313, Bi 357, or graduate standing.

***Geog 420/520
Field Methods in Physical Geography (4)**

Introduces students to field methods in physical geography. The goal is to familiarize the student with field techniques including research and sampling design, field measurements and mapping, data analysis and report writing and the use of field equipment. Field and lab exercises will focus on the examination of natural patterns and processes and those resulting from human activity. Techniques involving vegetation sampling, soil description, microclimatic conditions, and geomorphologic processes will be covered. Recommended prerequisite: eight hours of upper-division physical geography or graduate standing.

Geog 430/530*Cultural Geography (4)**

Explores cultural geography as a subfield of the discipline. Examines the major organizing concepts of cultural geography—cultural ecology, region, landscape, symbolism. Focus is on how these concepts are used in cultural geography, the evolution of research in each area, how the use and application of the concepts have changed over time, current theoretical developments, and how this subfield of geography fits into the discipline. Includes field work project. Recommended prerequisite: Geog 230.

Geog 432/532**Urban Landscapes (4)**

Analysis of the contemporary built environment of metropolitan areas; social, cultural, political, and economic forces that have given cities their form and image; historical processes of urban development; and messages and meanings of our surroundings. Focuses on common urban landscapes as well as designed spaces. In individual and group projects, students analyze the interrelationships of land use, residential density, street patterns, homes and yards, and open spaces in the Portland metropolitan area. Recommended prerequisite: Geog 332.

Geog 442/542**Sustainable Cities (4)**

Examines efforts to create sustainable cities in the United States, drawing on ideas from around the world. Explores complexities of balancing social justice with environmental health and economic vitality. Topics include urban ecology and green city initiatives, new ideas in designing the built environment, growth management and land use planning, community-based efforts to improve quality of life, and challenges of globalization for local economies. Includes fieldwork project, half-day field trips, and community-based learning option. Recommended prerequisites: Geog 332 or 432; USP 311 or 313.

Geog 445/545**Resource Management Topics (4)**

Focuses on advanced topics in administration and management of natural resources. Reviews historical issues and today's struggles for a sustainable approach in the development of natural resource policy. Emphasis will vary, e.g. water resources, energy resources, public lands. Recommended prerequisite: upper-division standing.

Geog 446/546**Water Resource Management (4)**

Analysis of the distribution, use and management of water resources, emphasizing the systems of water rights, legislation, and regulations which govern water resources. Issues of water development and water quality are examined. Focus is on U.S. water resource, with case studies from other countries and regions. Examples are drawn from local, regional, and international water resource management schemes. Recommended prerequisite: upper-division standing.

Geog 447/547**Urban Streams (4)**

Investigates issues associated with human dimensions of streams in the urban environment. Topics include the role of streams in the built environment, human modifications of stream systems and their consequences (e.g.,

disappearing streams, channelization), and local community responses to restore and protect urban streams. Case studies are drawn from national and international streams as well as local streams in the Portland metropolitan area. Recommended prerequisite: Geog 345 or Geog 347 or Geog 432/532.

Geog 448/548**The Urban Forest (4)**

Examination of issues related to trees in the urban environment. Topics will include the values and roles of urban trees, species identification, site selection, spatial structure of the urban forest, management and regulation of urban trees, and techniques for evaluating the health of the urban forest and public and governmental efforts to promote urban trees. Recommended prerequisite: one or more of Geog 313, 413/513, 415/515, 432/532, Bi 357.

Geog 450*Geography of Portland (4)**

Analysis of the geography of Portland. Lectures and guided field work. Students will work on group projects on specific topics involving research, data collection and analysis with oral and written presentations. Recommended prerequisite: 12 credits of geography.

Geog 453/553*Japan (4)**

The course focuses on the major geographical factors underlying Japan's rise to industrial and economic greatness in the present day. The main emphasis is upon the rise and development of cities and industry, the agricultural characteristics of Japan, and its contemporary trade relationship with the Pacific Northwest. Recommended prerequisite: Geog 353.

Geog 462/562**Sense of Place (4)**

Places are created by people, infused with meaning, and tied to personal experience. This course explores meaning in landscapes and identity in places, regions, and localities. It looks at places through three frameworks: place description and depiction (in media images, popular narratives, scholarly writings, photography, and art); the meanings and messages of places; and our personal experience and connections to places. Topics include: the distinctiveness of places, bioregional influences, personal memory and place, creating meaning in places, global-local tensions, territoriality, and contested places.

Geog 475/575**Digital Compilation and Database Design (4)**

Class in applied geographic information systems featuring the project development of new digital geo-spatial data. Students learn to digitize existing map documents, design information databases to be used with these data, and employ a standardized documentation format to describe the database. Prerequisites: Geog 488/588, prior or concurrent enrollment in Geog 492/592.

Geog 480/580**Visual Image Analysis (4)**

Visual interpretation and measurement from remotely sensed imagery used for mapping and spatial data development. Analysis of air photo pattern recognition and scale distortions. Examination of various satellite imaging platforms and product characteristics. Prerequisite: Geog 380.

Geog 481/581**Satellite Image Processing (4)**

Interpretation and measurement from digital satellite imagery used for interpretation of the earth's surface. Analysis will be largely based on the application of computer technology to imagery. The emphasis will be on natural landforms and vegetative cover. Recommended prerequisite: Geog 480.

Geog 482/582**Satellite Image Classification and Change Detection (4)**

Satellite image classification methods are used for thematic information extraction and digital change detection methods for measuring land use/land cover change. Image classification transforms digital satellite images to land cover types. Includes computer exercises in classification and change detection using leading satellite image processing software packages. Recommended prerequisite: Geog 480/580.

Geog 485/585**Map Design and Production (4)**

Introduction to the planning and execution of a map, with special emphasis on the arrangement of its graphic elements. Students will use cartographic and illustration software in the compilation, design and production of maps. Prerequisite: Geog 380.

Geog 488/588**Geographic Information Systems I: Introduction (4)**

Use of computers in Geographic Information Systems (GIS) and mapping. Includes theory of data bases related to geographic information management and practical aspects of database design. Students will use a variety of programs for mapping and spatial analysis of geographic information. Each student completes a series of lab exercises demonstrating a variety of approaches to the analysis and display of spatial data. Students enrolling in this class also must register for a computer lab section. Also listed as USP 591. Prerequisite: Geog 380 or equivalent experience in cartography.

Geog 489/589**Building a GIS Database with GPS (4)**

Develops knowledge and skills necessary to use the global positioning systems (GPS) to collect, process, and use geographic data. GPS theory and techniques through field survey experiences. Collect and integrate spatial and non-spatial data within an integrated geographic information system (GIS) framework. Prerequisite: Geog 488/588.

Geog 492/592**Geographic Information Systems II: Advanced GIS (4)**

Analysis and applications of geographic information systems concepts and technology to land planning and management issues. The multipurpose land information systems concept is used as an organizing device for spatial registration of data layers to achieve data sharing and compatibility among functions. User needs assessment and systems design provides the basis for systems procurement, implementation, and use. Students enrolling in this class also must register for a computer lab section. Also listed as USP 592. Prerequisite: Geog 488/588 or USP 591.

**Geog 494/594
GIS for Water Resources (4)**

Applications of Geographic Information Systems (GIS) in hydrology and water resource management. Topics include hydrologic networks, watershed characterization by GIS, river channel modeling with GIS, GIS modeling and visualization of hydrographic data, time-series water resource data representation and analysis in GIS, and issues in the applications of GIS for watershed management. Recommended prerequisites: Geog 380, 414, and 488.

**Geog 495/595
Maps, Models, and GIS (4)**

Analysis and display of spatial data, emphasizing environmental questions within the framework of the raster data model. Topics include an introduction to general systems theory, the nature of models, cartographic model development, model implementation procedures, map algebra, vector-to-raster data conversion, guidelines for symbol usage, and the incorporation of digital remote sensing data into map models. Prerequisite: Geog 380; Geog 485/585 recommended.

**Geog 496/596
Visualization of Spatial Data (4)**

The use of graphics as a fundamental descriptive and explanatory tool for visualizing data in geography and other disciplines. Topics include

graphic types, their design and meaning, visualization of spatial data surfaces, cartographic counterparts to descriptive statistics, data classification techniques, data transformations, index numbers, and spatial graphics software. Recommended: 12 hours of coursework in geography.

**Geog 497/597
Spatial Quantitative Analysis (4)**

Introduction to the principles of inferential spatial statistics. Topics include point pattern analysis, spatial autocorrelation, spatial interpolation, and multivariate spatial data analysis. Prerequisite: Geog 496/596; Stat 243 and 244 recommended.

**Geog 521
Geographic Thought (4)**

Geography as a professional field. The first half of the course deals with the history of geographic thought and literature. The second half focuses on the role of geography among the arts and sciences and on more recent developments in the field. Required of all graduate students in geography.

**Geog 522
Research Design (4)**

A guided program for preparing graduate research papers and theses in geography. Attention is given to formulating topics, devel-

oping hypotheses, determining researchability, acquiring and analyzing data, developing conclusions, and organizing and writing reports. Required of all graduate students in geography.

***Geog 586
Geographic Conversations (2)**

Exploration and critical evaluation of contemporary research in geography. Focus is on reading and group discussion of recent journal literature aimed at understanding the development of ideas, methodologies, and philosophies.

Themes will vary each term: cartography, physical geography, resource issues, human geography and other topics. Pass/no pass only, maximum 6 credits may be used toward graduate degree program.

**Geog 601
Research (Credit to be arranged.)****Geog 603
Thesis (Credit to be arranged.)****Geog 605
Reading and Conference (Credit to be arranged.)****Geog 607
Seminar (Credit to be arranged.)**

Geology

17A Cramer Hall
725-3022
www.geol.pdx.edu/

B.A., B.S.

Minor in Geology

Minor in Computer Applications

Minor in Environmental Geology

Minor in Space and Planetary Science

Secondary Education Program

M.A., M.S.

M.A.T. and M.S.T. (Science/Geology)

Ph.D.—Environmental Sciences and

Resources: Geology

Undergraduate programs

The Department of Geology offers programs leading to the bachelor's degree in geology, as well as studies in numerical modeling, geochemistry, geomicrobiology, hydrogeology, engineering geology, planetary geology, and environmental geology.

The programs serve both majors in geology and nonmajors: those who may wish to broaden their science background; those preparing to teach general or earth sciences or geology in elementary or second-

ary schools; and those preparing for a master's or a doctoral degree.

Postbaccalaureate students (with a bachelor's degree, not in geology) who wish to become professional geologists may complete this curriculum while doing both undergraduate and graduate work in geology.

Geologists are employed by government agencies at federal, state, county, and city levels; by independent consulting firms to work with engineers, architects and planners; in the construction, mining, and petroleum industries; and as teachers in elementary and high schools and at the college level.

Geologists who have graduated from PSU are employed, for example, in mitigation of environmental problems, assessment of ground and surface water resources, development of and exploration for mineral and fuel resources, management of mineral and fuel resources on private and public lands, urban planning, GIS, evaluation of the effects of forest roads and quarries on watershed health, management of their own companies, and instruction at all educational levels.

Students majoring in geology should plan to complete the required mathematics, chemistry, and physics courses as early in their program as possible.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for Bachelor of Science. In addition to meeting the general University degree requirements, the major must meet the following departmental requirements:

	Credits
G 201, 202 Geology	6
G 204, 205 Geology Laboratory or 207 Computer Based Geology Laboratory	2-3
G 312 Mineralogy	5
G 314 Petrology	5
G 318 Processes in the Surface Environment	5
G 322 Global Biogeochemical Cycles	5
G 324 Computer Applications and Information Technology	5
G 326 Numerical Modeling of Earth Systems	5
G 485 Field Methods in Geosciences	4
Total in geology	42-43

At least 24 credits of electives must be chosen from upper-division geology courses (excluding G 333, G 344, G 345, G 351, G 355, G 374, G 430, G 451, G 452, G 454, G 352, G 456, and G 457). This may include up to 8 credits of upper-division mathe-

maths, science, or engineering courses approved by the undergraduate adviser. Students may use up to 4 credits from an approved summer field camp course.....24

Subtotal 66-67

Mathematics through calculus to include Mth 251, 252, 261, 254.....16

One year of 200-level chemistry or equivalent with labs.....13-16

Ph 201, 202, 203 plus labs; or Ph 211, 212, 213 plus labs; or Ph 211, Ph 212 plus labs and EAS 211 Statics.....14-15

Subtotal 43-47

Total 109-114

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling departmental major requirements.

Requirements for Bachelor of Arts. In addition to meeting the general University degree requirements, the major must meet the following departmental requirements:

Credits

G 201, 202 Geology.....6

G 204, 205 Geology Laboratory or 207 Computer Based Geology Laboratory.....2-3

G 200 Field Studies.....1

G 312 Mineralogy.....5

G 324 Computer Applications and Information Technology.....5

Two of the following courses.....10

G 314 Petrology (5)

G 318 Processes in Surface Environment (5)

G 322 Global Biogeochemical Cycles (5)

Twelve credits selected from the following courses.....12

G 355 Geosciences for Elementary Educators (4) or

G 450 Middle School Earth/Space Science

G 374 Geomorphic Processes (4)

G 420 Applied Geophysics (4)

G 424 Geographic Information Systems in Natural Sciences (4)

G 425 Field GIS (4)

G 440 Volcanology (4)

G 442 Igneous Petrogenesis (4)

G 443 Groundwater Geology (4)

G 445 Geochemistry (4)

G 447 Environmental Sediment Transport (4)

G 448 Chemical Hydrogeology (4)

G 458 Astrobiology (4)

G 459 Quaternary Climate (4)

G 460 Soil Geomorphology (4)

G 461 Environmental Geology (4)

G 466 Glaciology (4)

G 470 Engineering Geology (4)

G 485 Field Methods in Geosciences (4)

Eight credits from the following courses:.....8

G 333 Evolutionary Concepts (4)

G 344 Geology and the National Parks (4)

G 345 Life in the Universe (4)

G 351 Introduction to Oceanography (4)

G 352 Minerals in World Affairs (4)

G 430 Life of the Past (4)

G 452 Geology of the Oregon Country (4)

G 454 Cascade Volcanoes (3 credits maximum) (1)

G 456 Astrogeology (4)

G 457 Volcanoes and Earthquakes (4)

Total in geology (minimum) 49

Upper-division credits selected from geography, urban studies and planning, or economics preapproved by the undergraduate adviser.....12

Mathematics to include Mth 251.....4

Statistics to include Stat 243; Stat 244 recommended.....4

One year of college chemistry plus labs.....13-16

One year of 100- or 200-level biology with labs or Ph 121 and 122, or Ec 201, 202.....8-15

Subtotal 41-51

Total 90-100

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling departmental major requirements.

Requirements for minor in geology. To earn a minor in geology, a student must complete a minimum of 29 credits (at least 14 credits of which must be taken in residence at PSU), to include the following:

Credits

G 200 Field Studies.....1

G 201, 202 Geology.....6

G 204, 205 Geology Laboratory or 207 Computer Based Geology Laboratory.....2-3

Twenty upper-division credits in geology.....20

Total (minimum) 29

Requirements for minor in environmental geology. To earn a minor in environmental geology, a student must complete a minimum of 29 credits (at least 14 credits of which must be taken in residence at PSU) to include the following:

Credits

G 200 Field Studies.....1

G 201, 202 Geology.....6

G 204, 205 Geology Laboratory or 207 Computer Based Geology Laboratory.....2-3

G 460 Soil Geomorphology or

G 461 Environmental Geology.....4

Sixteen upper-division credits chosen from:.....16

G 312 Mineralogy (5)

G 318 Processes in the Surface Environment (5)

G 322 Global Biogeochemical Cycles (5)

G 324 Computer Applications and Information Technology (5)

G 424 Geographic Information Systems for the Natural Sciences (4)

G 434 Structural Geology (4)

G 435 Stratigraphy (4)

G 440 Volcanology (4)

G 443 Groundwater Geology (4)

G 447 Environmental Sediment Transport (4)

G 448 Chemical Hydrogeology (4)

G 452 Geology of the Oregon Country (4)

G 459 Quaternary Climate (4)

G 460 Soil Geomorphology (4)

G 461 Environmental Geology (4)

G 470 Engineering Geology (4)

Total 29

Requirements for minor in computer applications. To earn a minor in computer applications with an emphasis in geosciences, a student must complete 30 credits (at least 24 credits of which must be taken in residence at PSU) to include the following:

Credits

100- or 200-level computer science course.....4

G 324 Computer Applications and Information Technology.....5

G 326 Numerical Modeling of Earth Systems.....5

Three adviser-approved courses in advanced computer applications, with at least 4 credits outside of geology. These courses may come from any unit in the University but may not include 405 reading/conference courses.....12

A one-term adviser-approved, upper-division research project or practicum.....4

Total 30

Students are encouraged to contact Michael L. Cummings, undergraduate adviser, for help in designing a program leading to a minor in environmental geology, geology, space and planetary sciences, or computer applications. Upper-division courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling department minor requirements.

Requirements for minor in space and planetary science. To earn a minor in space and planetary science, a student must complete a minimum of 28 credits (at least 16 credits of which must be taken in residence at PSU), to include the following:

Credits

Eight credits selected from the following:.....8

G 201/204, 202/205/207 Geology, Geology Laboratory, Computer Based Geology Laboratory (8-9 credits)

or Ph 121, 122 or Ph 261, 262 General Astronomy (8 credits).

Sixteen credits of electives selected from the following (may include other elective courses pre-approved by the undergraduate adviser):.....16

G345 Life in the Universe (4)

G374 Geomorphic Processes (4)

G456 Astrogeology (4)

G446 Meteorites (4)

G458 Astrobiology (4)

Ph 366, 367 Complexity and the Universe I and II (8)

Ph 476 Observational Astronomy (2)

Four credits selected from the following:.....4

G404 Cooperative Education/Internship

G405 Reading and Conference

Total 28

Pass/No Pass: Upper-division courses must be taken for a letter grade to count toward fulfilling department minor requirements with the exceptions of G404 and G405 which are offered only for pass/no pass.

SECONDARY EDUCATION PROGRAM

Adviser: **M.L. Cummings**

Students preparing for careers in K-12 teaching upon completion of a Graduate Teacher Education Program (GTEP) may qualify to teach geology and general science in middle and high schools by completing a B.A. or B.S. in geology or the requirements listed on page 143 for integrated science.

It is recommended that students who want to teach science in grades 5-9 major in geology and include a year-long introductory course in biology and a course in meteorology, astronomy, and oceanography; or major in general studies in science and complete the integrated science program on page 143.

Science courses are to be taken for differentiated grades, except for those offered only on a pass/no pass basis. Students must have at least a 2.75 GPA in science courses and must earn at least a C in each course.

Graduate programs

The Department of Geology offers programs leading to a graduate certificate, the Master of Arts or Master of Science in geology, an option in geohydrology, the Master of Arts in Teaching or Master of Science in Teaching (Science), and to the Ph.D. degree in environmental sciences and resources.

The M.A./M.S. program is designed to train geology students beyond the baccalaureate degree for professional employment or for advanced graduate work. The M.A.T./M.S.T. program is offered for teachers in secondary schools and community colleges.

The department is an active participant in the Environmental Sciences and Resources Doctoral Program. Specialized studies in hydrogeology, geomicrobiology, environmental geology, engineering geology, geomechanics, glaciology, and applied stratigraphy, along with multidisciplinary environmental sciences courses and seminars, will partially fulfill the requirements for the Ph.D. in environmental sciences and resources. For information relative to the Ph.D. program in environmental sciences and resources/geology, see page 127.

Admission requirements

Master of Arts and Master of Science. To be admitted to the graduate degree program, the student must have a baccalaureate degree in geology or its equivalent, as determined by the departmental graduate committee. It is required that the General Graduate Record Examination be taken before admission.

Master of Arts in Teaching or Master of Science in Teaching. The College of Liberal Arts and Sciences offers the M.A.T./M.S.T. degrees in Science/Geology. To be admitted to the M.A.T./M.S.T. program in Science/Geology, a student must hold a bachelor's degree in geology, or in the physical or life sciences—including the equivalent of a minor in geology. Students must take the general Graduate Record Examination and submit scores before admission for advising purposes.

Degree requirements

Master of Arts and Master of Science. University master's degree requirements are given on page 70. Specific departmental requirements for the M.S./M.A. are:

1. Completion of a minimum of 45 credits in approved graduate courses.

- a. Students must take G 523 Computer Application in Geology unless already taken as G 423 as an undergraduate.
 - b. Students must take at least 8 credits in geology courses numbered 610 or higher.
 - c. Students must take at least another 12 credits (16 credits if G 423 Computer Application in Geology was completed as an undergraduate) in the field of geology from 510 or higher level courses.
 - d. A maximum of 9 credits will be allowed for courses numbered 501 Research, 504 Cooperative Education/Internship, 505 Reading and Conference, or 506 Special Problems. These courses are offered for P/NP credit only.
 - e. Students must complete at least 6 credits of G 503 Thesis (P/NP only); up to 9 credits can count for the degree.
2. The department will evaluate a student's record for deficiencies at the time of admission and develop a list of courses that must be completed for a grade of B or better in each course within a length of time specified in the admission letter.
 3. Completion of field camp (could have been taken as an undergraduate) or equivalent field experience as approved by the field camp director.
 4. Presentation of a thesis.
 5. Completion of a final oral examination (thesis defense) taken before the end of the sixth week of the final term in residence.

Specific departmental requirements for the M.A./M.S. geology-geohydrology option are the same as above, or with a nonthesis option, are:

1. Completion of a minimum of 45 credits in approved graduate courses of which 36 must be for differentiated grades (A-F).
 - a. Students must take G 523 Computer Application in Geology unless already taken as G 423 as an undergraduate.
 - b. Students must take at least 8 credits in geology courses numbered G 610 or higher.
 - c. Students must take at least another 12 credits (16 credits if G 423 Computer Application in Geology was completed as an undergraduate) in the field of geology from G 510 or higher level courses.
 - d. Student must complete 3 credits in G 501 Research
 - e. A maximum of 3 additional credits will be allowed for courses numbered G 501 Research, G 504 Cooperative Education/Internship, G 505 Reading and Conference, and G 506 Special Problems or similarly numbered courses in other departments. These courses are offered for P/NP credit only.
2. The department will evaluate a student's record for deficiencies at the time of admission and develop a list of courses that must be completed for a grade of B or

- better in each course within a length of time specified in the admission letter.
3. Completion of field camp (could have been taken as an undergraduate) or equivalent field experience as approved by the field camp director.
 4. Presentation of a research project.
 5. Completion of a final oral examination on the subject area and the research project.

Master of Arts in Teaching or Master of Science in Teaching. In consultation with the graduate adviser, the student should establish the degree program before the completion of 16 credits of coursework. The program must include a minimum of 45 credits in approved graduate courses, to include a minimum of 30 credits in geology and related sciences, and 6 credits in G 506. At least 9 credits must be in education courses. In order to fulfill requirements for the degree, the student must satisfactorily complete the degree program and pass both a final written examination and a final oral examination.

Courses

Courses with an asterisk () are not offered every year.*

**G 199
Special Studies (Credit to be arranged.)
G 200**

Field Studies (1)

Participation in field trip exercises to enhance the understanding of materials and processes taught in corresponding lower division geology courses. Field studies areas include: coast, mountains, Portland area, Eastern Oregon, etc. Lecture, field trip, and completion of workbook required. Maximum of one credit in each field studies area. Prerequisite: Previous or concurrent enrollment in the corresponding lower-division geology course.

**G 201, 202
Geology (3, 3)**

Study of Earth's materials, structures, and the processes that have changed the Earth's surface throughout geologic time, in the light of the unifying plate tectonics model. Requires concurrent enrollment in G 204 for G 201, and G 205 or G207 for G 202. Classes will meet the requirements for science with an integrated laboratory experience

**G 204, 205
Geology Laboratory (1, 1)**

Laboratory work to accompany G 201 and 202, respectively, involving basic geologic principles and processes emphasizing rocks, minerals, topographic and geologic maps. One 2-hour laboratory period. Concurrent enrollment in G 201, 202, respectively, is required.

**G 207
Computer Based Geology Laboratory (2)**
Laboratory work to accompany G202 involving the application of Microsoft Excel, Microsoft Access, and ArcView GIS to solve geoscience problems. One 3-hour laboratory period. Concurrent enrollment in G 202 is required.

**G 301
Geology for Engineers (3)**

A study of the origin, interior, and crustal materials of the Earth: the natural processes which have built it up, deformed, and torn down the crust throughout geologic time: the environmental interrelationships between man and geologic processes and resources stressing application to engineering. For majors in civil engineering.

**G 312
Mineralogy (5)**

Description, classification, and genesis of minerals. Introduction to optical mineralogy. Two 75-minute lectures; two 2-hour laboratory periods. Prerequisite: one year of general chemistry.

**G 314
Petrology (5)**

Origin, classification, and distribution of igneous, metamorphic, and sedimentary rocks. Composition of the Earth's crust and mantle. Emphasis on rock type assemblages and their genesis occurring at major plate tectonic environments as represented by active/passive continental margins, rift zones, ocean basins and trenches, ocean islands, continent-continent collision belts, and stable cratons. Two 75-minute lectures; two 2-hour laboratory periods. Prerequisite: G 312.

**G 318
Processes in the Surface Environment (5)**

Physical processes occurring in the upper crust including tectonic provenances, weathering, mass transport, fluid-sediment transport, depositional environments, stratigraphic sequences, and intrastratal diagenesis. Two 75-minute lectures; two 2-hour laboratory periods. Prerequisite: G 312.

**G 322
Global Biogeochemical Cycles (5)**

A survey course in biogeochemistry from an earth history perspective. Study of the origin and evolution of Earth and its biogeochemical cycles; survey of the microbial and chemical reactions that occur within the atmosphere, lithosphere, hydrosphere and the biosphere; study of the mechanistic understanding of biogeochemical interactions to a large-scale, synthetic view of global biogeochemical cycles. Three 65-minute lectures and one 2-hour laboratory. Prerequisite: one year of chemistry.

**G 324
Computer Applications and Information Technology (5)**

Application of digital computers to problems in geology through familiarization with software and hardware for collecting, processing, analyzing, and presenting data. Topics covered include use of databases, spreadsheets, programming, analysis of data collected along a traverse, over a map area, and multivariate data. Applications to stratigraphic sections, chart recordings, sample locations, mapping, trend surfaces, and clustering. Three lectures and two 2-hour laboratories. Prerequisite: Mth 251 or concurrent enrollment.

**G 326
Numerical Modeling of Earth Systems (5)**

Application of modeling software to chemical, biological and physical global systems. Introduction to numerical methods, such as finite-elements and finite-differences, for solv-

ing systems of equations that describe geological processes. Three lectures and two 2-hour laboratories. Prerequisite: Mth 252 or concurrent enrollment.

***G 333
Evolutionary Concepts (4)**

Designed to provide background in evolutionary concepts for nonmajors and to address current issues in evolution as they are perceived and are being investigated by scientists in biology and geology. This is a combined lecture and discussion class and will include occasional guest lecturers presenting their research and views on various topics in evolution. A recitation is included for discussion and assistance with the required research paper. Credit can only be earned in one sponsoring department.

**G 344
Geology and the National Parks (4)**

Covers the geology that one finds in our national park system. Parks will be grouped by similar geology. Basic concepts of geology will first be covered in each group and then each park of the group discussed. Prerequisite: upper-division standing.

**G 345
Life in the Universe (4)**

Focus on issues surrounding the origin and evolution of life on Earth, the environmental conditions required for life elsewhere, and the potential for life on other planets and satellites in our solar system. Additional topics include the discovery, occurrence and habitability of extrasolar planets, and the philosophical and societal implications of searching for life beyond Earth. Prerequisite: upper-division standing. Two lectures, one 2-hour laboratory.

**G 351
Introduction to Oceanography (4)**

A survey course designed to give students a broad general background. Emphasis is on interrelationships of oceanography and other sciences. This course includes several laboratory experiences. Useful for general studies, teachers and environmental science majors. Prerequisite: upper-division standing.

**G 352
Minerals in World Affairs (4)**

The geologic origin and occurrence of metals, fuels, and industrial minerals and rocks; their geographic distribution and relative abundance or lack among nations; the rules and principles which influence their past, present, and future exploration, development, and use.

**G 355
Geosciences for Elementary Educators (4)**

An integrated survey of concepts from geology, astronomy, and climatology for students interested in elementary education. Course will be designed around suggested content in the Oregon Content Standards. Prerequisite: upper-division standing.

***G 374
Geomorphic Processes (4)**

A study of landform processes at the earth's surface including the work of water, wind, and ice in erosion, transportation, and deposition on land and sea. The significance of geomorphic processes to human activities is included. A one to two-day weekend field trip is required. Three lectures and one 3-hour laboratory.

Prerequisite: G 202 or equivalent. No credit allowed if taken after G 318. May not be used as an elective for the B.S. in geology.

**G 399
Special Studies (Credit to be arranged.)**

**G 401/501
Research (Credit to be arranged.)**

Prerequisite: G 405.

**G 404/504
Cooperative Education/Internship (Credit to be arranged.)**

**G 405/505
Reading and Conference (Credit to be arranged.)**

**G 407/507
Seminar (Credit to be arranged.)**

**G 410/510
Selected Topics (Credit to be arranged.)**

Consent of instructor.

***G 420/520
Applied Geophysics (4)**

Principles of geophysical measurement and interpretation; seismology, gravimetry, isostasy, geomagnetism, terrestrial electricity. Includes a survey of geophysical exploration techniques. Three lectures, one 2-hour lab. Prerequisites: one year of general physics, one year of calculus.

**G 423/523
Statistics and Data Analysis in the Geosciences (4)**

Application of digital computers to problems in geology. Topics covered are analysis of data collected along a traverse, over a map area, and multivariate data. Applications to stratigraphic sections, chart recordings, sample locations, mapping, trend surfaces, and clustering. Two lectures and two 2-hour laboratory. Prerequisite: one year of calculus.

**G 424/524
Geographical Information Systems for the Natural Sciences (4)**

Spatial data are input, analyzed, and displayed. Techniques covered include: data management, projections and reference datum, digitizing, raster and vector operations, spatial statistics. Class projects apply data management and analysis techniques to the natural sciences. Weekly professional quality lab reports are required. GIS tutorial followed by a gateway exam is used to demonstrate mastery of introductory material. Prerequisite: Upper-division standing in a physical or life science or mathematics program.

**G 425/525
Field GIS (4)**

Acquisition, storage, and display of field-based data for the natural sciences. Geospatial data generated using field-based technologies (i.e. GPS) are converted into appropriate database structures (i.e. GIS) for analysis and reporting. Project design and implementation are developed in cooperation with the instructor. Integrated laboratory/field experience. Recommended prerequisites: Stat 243 or G 324, 8 to 15 credits of lab-based 200-level introductory courses in geology, biology, physics, chemistry, or environmental sciences. Upper-division standing.

**G 430/530
Life of the Past (4)**

Origin and development of plants, animals and man on earth, as interpreted from the study of

fossils and the sedimentary rocks in which they occur. Includes integrated laboratory and field experience. Prerequisite: upper-division standing. Two lectures, one 2-hour laboratory (academic year) or field studies (summer).

***G 434
Structural Geology (4)**

Study of origin, interpretation, and mapping of major and minor geologic structures. Two lectures; two 2-hour laboratories; and required field study. Prerequisite: G 318.

***G 435
Stratigraphy (4)**

Principles and techniques of recognition, interpretation, and correlation of stratified rock units used to establish time histories of tectonic, volcanic, and surficial processes, and environment of deposition. Three lectures, one 2-hour laboratory, and required field study. Prerequisite: G 318.

***G 437/537
Analytical Methods (4)**

Fundamentals, applications, and use of analytical methods in the analysis of earth materials. Analytical methods will include optical and X-ray methods and introduction to microthermometric analysis, differential thermal analysis, and granulometry. Two lectures; two 2-hour laboratory periods. Prerequisite: G 312, one year of general physics, radiation safety certification (acceptable as a corequisite).

**G 438/538
Scanning Electron Microscopy for the Biogeosciences (4)**

Course provides student with a theoretical understanding of various scanning analytical electron microscopy techniques and hands-on experience using such techniques to characterize geological and biological materials. Topics covered include the basic physics of image and spectrum formation, sample preparation, instrument operation, and data analysis. Two hours lecture and two hours of by-arrangement laboratory. Prerequisite: introductory course sequence in geology, biology, chemistry, physics, or environmental science.

***G 439/539
Powder X-ray Diffraction (2)**

Identifies and quantifies minerals using powder X-ray diffraction (XRD), includes the nature and production of X-rays, basic X-ray crystallography, the principles and applications of X-ray diffraction, as well as certification for use of the X-ray diffractometer. Also includes an independent project to identify or quantify unknown minerals using the XRD. Prerequisite: G 312 or one year of general chemistry.

***G 440/540
Volcanology (4)**

Classification of volcanic rocks and volcanic stratigraphic units; eruptive mechanisms; modes of volcanic deposition; recognition, mapping, and correlation of volcanic units; and stratigraphic syntheses of volcanic terranes. Two 75-minute lectures, one 2-hour laboratory. Field trip is required. Prerequisite: G 314.

***G 442/542
Igneous Petrogenesis (4)**

Investigation into the origin and evolution of magmas and igneous rock suites using geochemical and petrographic methods, differentiation of the Earth through time, global element

cycles driven by igneous processes. Two lectures; two 2-hour laboratory periods. Prerequisite: G 314.

**G 443/543
Ground Water Geology (4)**

Study of the physical and chemical properties of underground water; the physical properties of aquifers and their control and effect on the contained waters; water movement and the conservation and utilization of existing ground water bodies as well as development of new water bodies and rejuvenation of depleted and starved aquifers. Prerequisites: one year of calculus, general physics, general chemistry.

***G 444/544
Well Dynamics (4)**

Study of the interactions of water wells and an aquifer system, including all types of aquifer systems and pump tests to analyze those systems, well drilling and design, pump selection, and groundwater explorations. Prerequisite: G 443.

***G 445/545
Geochemistry (4)**

A survey of geochemistry. Emphasis on distribution of elements in the Earth, nuclear geochemistry and thermodynamics of geologic systems. Prerequisite: G 314.

***G 446/546
Meteorites (4)**

A course examining meteorites and the information they provide about the birth and evolution of the solar system. Topics include asteroids and asteroidal heat sources, the solar nebula, early solar system chronology, pre-solar grains, abiotic synthesis of organic matter, differentiation, impacts and collisional processes, and meteorites from Mars. Three lectures. Prerequisites: G 201, one year of chemistry.

***G 447/547
Environmental Sediment Transport (4)**

Study of sediment transport, bedforms, and depositional environment, with focus on quantitative methods of predicting rates of sediment yield, transport, and deposition in terrestrial and marine environments. Prerequisites: ESR 220 or G 202 and Mth 251.

**G 448/548
Chemical Hydrogeology (4)**

The study of low temperature aqueous groundwater geochemistry with emphasis on factors which change chemical composition of groundwater and factors which influence the transport of both inorganic and organic contaminants. Topics will include geochemistry of equilibrium reactions, mineral solubility, complexing, oxidation-reduction reactions, surface reactions and vadose zone processes. Prerequisites: one year of chemistry. Two lectures, one 2-hour laboratory.

**G 450/550
Middle School Earth/Space Sciences (4)**

Examines the Earth and Space science content area and classroom and developmentally appropriate field experiences for middle school students. Emphasis on developing hands-on and technology-based activities centered on the Earth and Space sciences. Materials are developed within the context of standards-based education models. Prerequisites: 24 credits of mathematics and/or science courses.

**G 452/552
Geology of the Oregon Country (4)**

Origin and geologic history of landscape features in Oregon and the Pacific Northwest. Two lectures, one 2-hour laboratory (academic year) or field studies (summer). Prerequisites: upper-division standing and one of the following: G 201, 202, 344, 351, 430, 455, 457.

**G 453
Geology of the Pacific Northwest (4)**

Survey of the topographic and geologic features of the Pacific Northwest, emphasizing geologic and mining history and focusing on the close relationship between the Pacific Northwest as the leading edge of a moving continental plate, the geologic/paleobiologic (fossil) record of this area, and the implications of recent tectonic activity; the Mt. St. Helens eruption, earthquakes, floods, and threats of major seismic sea waves or tsunami. Prerequisite: upper-division standing. (Notes: Course available only through Independent Study.)

**G 454/554
Cascade Volcanoes (1)**

Field course in the study of one or more Cascade volcanoes—origin and development of volcano, eruptive mechanism, deposits, rock types, and hazards. Course may be repeated for different volcano studies. Offered summers. Prerequisites: upper-division standing and one prior course from the following: G 201, 202. May be used to meet requirements for the B.A. in geology. May not be used to meet requirements for the B.S. in geology.

**G 456/556
Astrogeology (4)**

Geology and astronomy are combined to explore the evolution of the Universe and the Solar System. Comparative geologic evolution of the planets is emphasized. A significant component of the course is hands-on geologic field investigations and astronomical observations (summer) or 2-hour laboratory (academic year). Prerequisite: upper-division standing.

***G 457
Volcanoes and Earthquakes (4)**

A study of volcanoes and earthquakes as they affect humans and the development of landscapes. A field trip is required. Prerequisite: an introductory science course.

**G 458/558
Astrobiology (4)**

Astrobiology focuses on issues surrounding the origin and evolution of life on Earth, the environmental conditions required for life elsewhere, and the potential for life on other planets and satellites in our solar system. Additional topics include the discovery, occurrence, and habitability of extrasolar planets, and the philosophical and societal implications of searching for life beyond earth. Prerequisites: G 322 or upper-division standing in life, environmental, or physical science.

***G 459/559
Quaternary Climate (4)**

Study of the causes and consequences of climate change through the Quaternary. Topics include: an overview of climate system dynamics; the geologic record of Quaternary climate and its profound glacial to interglacial cycles; the use of that record to develop conceptual

models of paleoclimate interactions among land, ocean, atmosphere, and biosphere; and geologic changes during the Cenozoic (the last 65 million years) that set the stage for the Quaternary. Includes computer laboratory exercises using paleoclimate data. Prerequisite: upper-division standing in a physical or life science program.

***G 460/560**

Soil Geomorphology (4)

Effects of climate, vegetation, parent material, topography, and time on the development, weathering, classification, and chemistry of soils. Two 75-minute lectures and one 2-hour laboratory. Prerequisites: G 201, 202, Ch 200-level (1 year).

***G 461/561**

Environmental Geology (4)

Study of natural hazards and related land use planning (flooding, landslides, earthquakes, volcanic, coastal) waste disposal and pollution in the geological environment, water supply, mineral and energy resources, environmental law related to geology, medical geology, climatic change. Two 75-minute lectures and one 2-hour laboratory. Prerequisites: general chemistry (1 year), G 201, 202.

***G 465/565**

Glacial Geomorphology (4)

The investigation of the importance of glaciers to landscape modification and global environmental change via an understanding of their formation, structure, mass and energy exchange, and movement. Erosion and deposition processes will also be examined. This class adopts the process perspective whereby understanding the physical processes provides significant insight into the relative importance of the controlling mechanisms of change. Field trip is required. Prerequisites: introductory geology, physical geography, or geomorphology course.

***G 466/566**

Glaciology (4)

The physics of glacier ice and its mathematical description, and the processes that cause glaciers and ice sheets to change over time. Intended for students with interests in glaciers, geophysical fluid flows, or who wish to build their quantitative and computational skills. Includes computational laboratory exercises. Prerequisites: one year of calculus and one year of physics.

***G 470/570**

Engineering Geology (4)

Applications of geological information to engineering problems: soil mechanics, rock mechanics, construction materials, groundwater and construction, instrumentation, exploration, terrain models, landslide analysis. Three hours of lecture and two hours of lab per week. Labs stress quantitative analysis. One day field trip explores landslides of the Portland area. Prerequisites: G 202, Ph 203.

***G 475/575**

Introduction to Seismology and Site Evaluation (4)

Earthquakes and exploration seismology, the origin and occurrence of earthquakes, nature and propagation of seismic waves in the earth, earthquakes as a hazard to life and property. Uses of reflection and refraction exploration

seismology, borehole velocity measurements, seismic remote sensing, and direct measurement techniques. Earthquake hazard assessment including liquefaction, ground failure, and site amplification. Techniques for evaluating the susceptibility, potential, and severity of the hazards and other science and engineering applications. Prerequisite: senior/ graduate standing. This course is the same as CE 443/543; course may be taken only once for credit.

***G 477/577**

Earthquake Accommodation and Design (4)

Effects of earthquake shaking in the design of buildings, pipelines, bridges, and dams. Incorporating the earthquake hazard assessment for a project in the design process. The goal of this course is to allow geologists, geotechnical engineers, structural engineers, and architects to see how their particular tasks are impacted by the earthquake effects. Types of analysis used to evaluate earthquake design requirements in the several disciplines including geology, geotechnical engineering, structural engineering, and architecture. Prerequisite: G 475/575 or CE 443/543. This course is the same as CE 448/548; course may be taken only once for credit.

***G 481/581**

Field Geology (4)

Geologic mapping in sedimentary and volcanic rocks or metamorphic and plutonic rocks during a summer field camp. A charge will be made for the expenses of the field camp. Approximately 64 hours of field work in the summer. Prerequisites: G 485.

***G 484/584**

Field Geophysics (4)

Applications of geophysical techniques to solving a field problem. Methods applied may include gravity, resistivity, refraction ground penetrating radar, and magnetics. Includes at least one weekend in the field and production of a final report with data and conclusions. Prerequisites: Ph 203 or 213, Mth 253.

G 485

Field Methods in Geosciences (4)

Principles of geologic mapping, and data collection using optical surveying instruments, Global Positioning System, and aerial photographs, preparation of reports and maps. Two lectures and two 3-hour laboratories. One-week field exercise at end of term. Prerequisite: G 324.

***G 491/591**

Physical Processes in Geology (4)

Application of mechanics to physical processes in geology, such as igneous intrusion, rock folding, debris flow, lava flow, groundwater, and glaciation. Prerequisites: Mth 254, Ph 203.

G 492/592

Topics in Geodynamics (4)

Special topics concerning the dynamics that govern earth processes such as fluid flows and plate motions, and related physical properties of Earth materials. Representative topics include ice sheet dynamics, glacier dynamics, and thermodynamic modes of earth systems. May be repeated for credit if topics are different. Two lectures and one 2-hour laboratory. Prerequisites: Mth 254, Ph 213, and G 326.

G 502/602

Independent Study (Credit to be arranged.)

Pass/no pass only.

G 503

Thesis (Credit to be arranged.)

Pass/no pass only.

G 506

Special Problems (Credit to be arranged.)

***G 571/671**

Advanced Engineering Geology (4)

Strength and stability of earth materials, resources, and land use, exploration and instrumentation, professional practices. Prerequisite: G 470.

***G 592/692**

Methods in Quaternary Stratigraphy (4)

Analysis of the methods used and their applications in physical stratigraphy including seismic, sequence, geochemical, paleomagnetic, well log, and topics in Quaternary process stratigraphy. Prerequisite: G 434.

***G 595/695**

Topics in Geomechanics (4)

Topics chosen from finite strain, rock fracture, and rock folding. May be repeated if topics are different. Prerequisites: G 491/591, Mth 254, Ph 203.

G 601

Research (Credit to be arranged.)

G 603

Thesis (Credit to be arranged.)

G 604

Cooperative Education/Internship (Credit to be arranged.)

G 605

Reading and Conference (Credit to be arranged.)

G 606

Special Problems/Projects (Credit to be arranged.)

G 607

Seminar (Credit to be arranged.)

G 610

Selected Topics (Credit to be arranged.)

***G 612**

Topics in Igneous Petrology (4)

Topics in the origin and formation of igneous rock masses; their derivation, evolution, chemistry, structure, and modes of emplacement. Advanced techniques in analysis and examination. May be repeated if topics are different. Two lectures and one 2-hour laboratory. Prerequisite: G 542.

***G 618**

Clay Mineralogy (4)

Clay structure and classification, clay mineral analyses including X-ray identification and differential thermal analysis, mixed-layer clays, clay-water systems, clay mineral-organic reactions, engineering properties related to clay materials, geological occurrence of clays. Major emphasis on engineering problems related to clays and the field occurrence of clays. Prerequisite: radiation safety certification.

***G 619**

Topics in Geochemistry (4)

Topics in the application of geochemistry to solve geological problems. Advanced techniques in analysis and examination. Two lectures and one 2-hour laboratory. May be repeated if topics are different. Prerequisite: G 545.

History

441 Cramer Hall
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www.history.pdx.edu

**B.A., B.S.
Minor
Secondary Education Program—Social
Science
M.A.
M.A.T. and M.S.T. (General Social
Science)**

Undergraduate program

Students of history, through investigation of the past, gain skills and perspectives that foster a better understanding of the world and their place in it. The study of history contributes to the goals of a liberal arts education by enabling students to gain a deep appreciation of the diversity of human experience over time. Through the study of history, students learn how to interpret their own experience and to shape their own values by engaging in dialogues with the past. The study of history also nurtures the ability to view the world from multiple perspectives, including interdisciplinary ones. Finally, history provides the foundation for informed participation in both the local and the global community by teaching how to apply critical thinking skills to solving problems. The study of history offers excellent training for a variety of occupations, from teaching to law, government, business, and the arts.

The Department of History encourages active engagement in historical inquiry, whether at the introductory survey level, in seminars, or in community-based learning. Active engagement requires students to learn how to master basic knowledge, ask historical questions, access and evaluate information, and communicate what they have learned in both written and oral forms. Helping students master the use of a variety of sources and tools to unlock the past is a goal of all history courses.

The combined expertise of faculty in the Department of History encompasses a diversity of fields ranging from Oregon and the Pacific Northwest to world history. The department offers lower-division surveys in Western civilization and U.S. history, but the gateway course for the major is Hst 300 Historical Imagination, which provides an introduction to the dis-

cipline—both the theory and practice—of history. Advising is critical, since majors are encouraged to develop their own thematic, chronological, or geographical focus through their choice of upper-division elective courses. Upper-division offerings include a wide range of subject areas, from the ancient Near East to American family history. Seminars (Hst 407) on specialized topics—such as medieval Spain or Japanese nationalism—provide the opportunity for majors to write a substantial research paper and to participate in intensive reading and discussion of topics. Hst 495 Comparative World History—a thematic course—is required for the major to ensure that students develop the ability to frame what they know in a world historical context and to apply comparative analysis to important historical topics.

In line with the University's mission as an urban, public institution, the Department of History supports partnerships with the Oregon Historical Society and the Center for Columbia River History and offers training in public history. All faculty consider both teaching and research, along with community service, to be part of their responsibilities as members of the Department of History. The creation of knowledge, as well as its dissemination through teaching and publication, is a vital part of the department's mission.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. In addition to meeting the general University degree requirements, the major in history must meet the departmental requirements listed:

	Credits
Lower-division history electives (maximum)	12
Hst 300 Historical Imagination.....	4
Hst 407 Seminar	8
Hst 495 Comparative World History	4
Upper-division electives in history. Selected in consultation with major adviser; geographic, thematic, or period-based.....	32-44
Total	60

- ◆ All courses are to be taken for differentiated grades and the history major must earn at least a C- in each course presented to meet major requirements.

- ◆ Of the electives students apply to the history major requirements, at least two courses must examine a non-European and non-U.S. subject, and at least two courses must examine either Europe or the United States.
- ◆ A maximum of 12 lower-division credits in history may be applied to the major requirements.
- ◆ A minimum of 32 credits in history must be taken in residence at Portland State University.
- ◆ With the approval of their major adviser, history majors may apply to their major requirements two upper-division courses (maximum of 8 credits) taken outside of history. This is provided to encourage students to design interdisciplinary history majors.

History honors option. The honors program in history affords outstanding history majors the opportunity to propose, carry out, and formally present independent research on a topic of their choosing, under the guidance of a faculty adviser. Students who successfully complete an approved thesis and its associated 16 credit-hour honors curriculum will be formally designated history honors graduates and receive notice of this distinction on their diplomas. Students who wish to pursue the honors in history option must apply to do so after having completed a minimum 24 credit hours in the major and before they have attained senior standing. The history honors option requires a 3.50 GPA in history prior to admission to the program.

The honors in history program includes an undergraduate thesis which students produce in their junior and senior years. Following successful admission to the program, during the junior year the student develops a thesis topic in a reading and conference course (Hst 405) directed by a faculty member who has agreed to supervise the student's honors thesis. In the senior year, the first term is devoted to research (Hst 401), the second term to writing (Hst 403), and the third to presentation and revision of the thesis (Hst 403).

Requirements for minor. To earn a minor in history a student must complete 32 credits, including the following:

	Credits
Hst 300 Historical Imagination.....	4
Hst 407 Seminar	4
Hst 495 Comparative World History	4
History Electives	20
Total	32

- ◆ All courses are to be taken for differentiated grades and the history minor must earn at least a C- in each course presented to meet minor requirements.
- ◆ A maximum of 12 credits from lower-division history courses can be applied to the minor requirements.
- ◆ A minimum of 16 credits in history in residence at Portland State University is required.

SECONDARY EDUCATION PROGRAM

Students interested in the Secondary Education Program in Social Science discover that historical study establishes a context for each of the human sciences: psychology, anthropology, sociology, economics, geography, and political science. (See General Studies: Social Science page 142).

Graduate programs

Admission requirements

Master of Arts. The Department of History offers a Master of Arts degree. The degree program is designed to develop historians with special competence by systematic training in the content, methods, and interpretation of history. Although each degree program will vary, as will the individual's purpose for pursuing graduate work, the same level of scholarly competence and intellectual attainment is expected of all students.

To be considered for admission to graduate study, the student should normally have the minimum preparation undertaken by an undergraduate major in history and have maintained a minimum GPA of 3.25 in upper-division history courses. In addition to the University application for graduate studies, students are required to submit their score on the Aptitude section of the Graduate Record Examination, two letters of recommendation from faculty or other individuals who can evaluate their preparation for graduate studies, a statement of purpose describing their objectives in graduate study, and two examples of their writing, preferably history research papers. Foreign students must comply with the University requirement of a minimum grade of 550 in the Test of English as a Foreign Language (TOEFL).

Master of Arts in Teaching or Master of Science in Teaching. For information on the Master of Arts in Teaching or the Master of Science in Teaching (General Social Science), see page 144.

Degree requirements

University master's degree requirements are listed on page 70. Specific departmental requirements are listed below.

Master of Arts. A minimum of 48 credits of approved graduate-level courses are required for the M.A. in history. Of these 48 credits students must complete a minimum of 36 credits in history, to include two seminars (Hst 507) and 8 credits of thesis writing (Hst 503). With the approval of their thesis adviser, students can apply to their M.A. program a maximum of 12 credits from graduate courses taken outside of history. Students are normally admitted for the fall term and are strongly advised to complete Hst 500 Introduction to the Master's Program in History in the first term of study. Hst 500 is strongly recommended for all entering graduate students and is required for those who have not completed an undergraduate course in historiography (Hst 300 or equivalent).

Coursework for the M.A. must include two historical fields. The first field will consist of a minimum of 12 credits of coursework, and the second field a minimum of 8 credits. Either field may be defined geographically or thematically. The geographic fields offered in the graduate program are: Ancient Mediterranean (Greece, Rome, Egypt); Britain; Colonial America and the United States; East Asia (China, Japan); Medieval/Early Modern/Modern Europe; Latin America; and Middle East. Thematic fields include, but are not limited to, religious history, economic history, history of science, world history, and women's history.

Public History. Students wishing to pursue a career in public history are urged to consider the department's public history M.A. track. Public history students take field courses, seminars, internships, and laboratory courses that cover a broad range of public history sub-fields, including: archival management, oral history, museology, cultural resource management, site interpretation, publications, and historic preservation. Coursework includes a balance of classroom and practical offerings. Students choosing the public history track as their primary field are required to have a second field defined geographically. In addition to fulfilling all other requirements for a Master of Arts in history, students are also required to complete the following:

1. Hst 596 Introduction to Public History;
2. a public product (e.g., exhibit, Web site, public program, audio, or video document) as part of the required master's thesis;

3. one public history seminar;
4. one public history internship; and
5. two public history lab courses.

The Master of Arts in history focuses upon the preparation and defense of a thesis based upon primary source research that follows from a program planned in consultation with the student's adviser.

The department stresses the importance of adequate preparation in foreign languages to be utilized by students in their advanced study and research. Graduate students must demonstrate proficiency in a foreign language germane to their thesis field no later than the point at which they have completed 32 credits of graduate study.

All students are required to take written examinations covering their chosen fields of concentration. The written examination in the student's first field should be passed before the end of the first year of graduate study (i.e., 24 credits). Students should pass the written examination in the second field before the completion of 32 credits.

For graduation, finally, each student must successfully defend their thesis in an oral examination before their thesis committee composed of: (1) the student's adviser; (2) a second field examiner (with consent of the adviser, another member of the History Department can take the place of the second examiner on the thesis committee); (3) a third reader from the History Department or, if relevant to the thesis topic, from another department (appointment of a third reader is strongly recommended but can be waived with consent of adviser); (4) an outside examiner appointed by the dean of graduate studies.

Master of Arts in Teaching or Master of Science in Teaching. For information on the Master of Arts in teaching and the Master of Science in Teaching (General Social Science), see page 144.

Courses

Courses with an asterisk (*) are not offered every year.

Hst 101, 102, 103

History of Western Civilizations (4, 4, 4)

Survey of the origins and development of Western civilizations from antiquity to the present. Hst 101: Antiquity to Renaissance; Hst 102: Late Medieval to Enlightenment; Hst 103: Enlightenment to present.

Hst 199

Special Studies (Credit to be arranged.)

Hst 201, 202

History of the United States (4, 4)

General survey of United States history. Hst 201: colonial era to the Civil War (circa 1600-1860); Hst 202: Reconstruction of the South to present.

Hst 300

The Historical Imagination (4)

The how and why of the historian's craft: (1) an introduction to the basics of research and writ-

ing; (2) an examination of historical writing, its relationship to the time and place of its origin, and the emergence of the ideas, consciousness, and canons of scholarship which shaped it. This course serves as an introduction to the study of history at the upper-division level and is recommended for students beginning their junior year.

Hst 312

African History Before 1800 (4)

An upper-division course designed to survey the history of the African continent from earliest times to the period of the Atlantic slave trade. Using a lecture/discussion format, the course will examine the impact of trade, technology, and ecology on the transformation of African societies before 1800. This course is the same as BSt 305; may be taken only once for credit. Recommended prerequisite: upper-division standing.

Hst 313

African History Since 1800 (4)

An upper-division course designed to survey the history of the African continent from 1800 to the present, with emphasis on the era of the Atlantic slave trade, colonial period, independence, and post independence. Recommended prerequisite: Hst 312 or upper-division standing. This course is the same as BSt 306; course may be taken only once for credit.

Hst 314

Ancient Near East and Egypt (4)

Covers the Stone Age to the death of Alexander the Great in 323 BC, from Afghanistan to Egypt. Topics include the agricultural revolution, Gilgamesh, the Bible, the Persians, Afrocentrism, and Zoroastrianism. Recommended prerequisite: Hst 101 or upper-division standing.

Hst 315

Greek History (4)

A survey of the social, political, economic, and cultural history of the Greeks and their neighbors. From earliest beginnings until the death of Alexander. Recommended prerequisite: Hst 101 or Sophomore Inquiry (Greek Civilization).

Hst 316

Roman History (4)

A study of the social, political, economic, and cultural history of the Mediterranean region between 753 BCE and the fall of Rome. Recommended prerequisite: Hst 101 or Sophomore Inquiry (Greek Civilization).

Hst 320

East Asian Civilizations (4)

Foundations of East Asian civilizations from perspective of China as dominant civilization in East Asia. Interaction between Chinese influence and indigenous traditions in Japan, Korea, and Vietnam. Attention to major philosophical and religious traditions, such as Confucianism and Buddhism; origins and structure of political institutions; family life and social organization; and literary traditions. Chronological coverage to about 1800. Recommended: upper-division standing.

Hst 321

Modern East Asia (4)

History of East Asia from around 1800, beginning with the Opium Wars in China and the Meiji Restoration in Japan, through postwar state and society in Japan and the People's

Republic of China. Some attention to Korea, Vietnam, and Taiwan. Emphasis on concepts of imperialism, Westernization, modernization, and revolution. Recommended prerequisite: upper-division standing.

Hst 327, 328, 329

The U.S. in the 20th Century (4, 4, 4)

Hst 327: 1890-1932, Populism and the Crisis of the 1890s; the Purity Crusade; Corporate and Anticorporate Progressivism; Theodore Roosevelt and Woodrow Wilson; the Open Door Policy and World War I; the League of Nations and the Red Scare; the New Era and Insurgents of the 1920s; the Cultural Conflicts of the 1920s; Herbert Hoover, the Great Depression, and the Election of 1932. Hst 328: 1932-1960, Franklin D. Roosevelt and the New Deal Managerial State; Anti-New Dealers and the Noninterventionist Movement; World War II and the New Order; the Cold War and the National Security State under Truman and Eisenhower; the Anti-Communist Crusade of the 1950s. Hst 329: 1960 to the Present, John F. Kennedy and the New Frontier; Civil Rights, Lyndon Johnson, and the Great Society; the Vietnam War; the New Left and Counterculture; Richard Nixon and Watergate; Jimmy Carter, Ronald Reagan, and the Rise of Populist Conservatism; George Bush, Bill Clinton, and the Global Economy. Recommended prerequisite: upper-division standing.

Hst 330

Native Americans of Eastern North America (4)

Examines the origins of the Eastern Woodlands societies, surveys their culture around the time of European colonization, and considers how that culture changed in response to the arrival of Europeans to the North American continent. Traces the development of the major Indian nations of the region and explores how those nations responded to the Indian policy of the United States in the 19th and 20th centuries. Recommended prerequisite: upper-division standing.

Hst 331

Native Americans of Western North America (4)

Explores the history of peoples native to Western North America in the American Southwest and Pacific Coast regions, and in British Columbia. Covers the period from pre-contact to the present and considers the responses from native nations to the re-peopling of the West as well as examining U.S. and Canadian Indian policy. Recommended prerequisite: upper-division standing.

Hst 336

Lewis and Clark and the American West (4)

The importance of the Lewis and Clark expedition for the history of the American West. Special emphasis on the prologue to the expedition and its environmental, political, economic, scientific, social, and intellectual legacies. Covers the period from the end of the American Revolution to 1840. Recommended prerequisite: upper-division standing.

*Hst 337

History of American Cities (4)

Traces the evolution of urban centers from the colonial period to the present. Focuses on the developing system of cities, on growth within

cities, and on the expansion of public responsibility for the welfare of urban residents. Particular attention is given to the industrial and modern eras. Recommended prerequisite: upper-division standing.

Hst 338

Oregon History (4)

Explores the political and social history of the area most of us call home: Oregon Country, Oregon Territory, and the state of Oregon. Through lectures, readings, film, and discussion we will examine the connections between the local, national, and international as they pertain to this place. Topics considered include Oregon as Indian Country, Black Exclusion laws, the natural resource economy, the Tom McCall era, and Rajneeshes as new pioneers. Recommended prerequisite: upper-division standing.

Hst 339

The Environment and History (4)

Introduction to the theme of the environment in the study of history and the history of environmental ideas, from the 16th century to the present, with special focus on the impact of science, philosophy, literature, and history on our understanding of the environment. Designed as an introductory course for students of all majors. Recommended prerequisite: upper-division standing.

Hst 340

Women and Gender in America to 1848 (4)

Surveys the history of women in the middle North American continent to 1848. It highlights the experiences of and relationships among women of diverse origins, especially Native women, African women, and European women. Key themes include family, kinship, and sex-gender systems; colonialism and slavery; religious life; politics and the law; nation-building and the rise of modern citizenship. Recommended prerequisite: upper-division standing.

Hst 341

Women and Gender in the United States 1848-1920 (4)

Explores the diverse experiences of women in the United States between 1848 and 1920. Key themes include slavery, emancipation, and Reconstruction; colonialism and resistance; women's rights and social reform; education and wage labor; immigration/migration; and Victorianism and sexual modernism. Recommended prerequisite: upper-division standing.

Hst 342

Women and Gender in the U.S. 1920 to the Present (4)

Surveys women's lives and gender change in recent U.S. history. Among our themes will be women in politics, the work force, and social movements as well as changes in family life, gender identities, and sexuality. Women's roles in globalization, the media, and popular culture will figure throughout. Recommended prerequisite: upper-division standing.

Hst 343

American Family History (4)

History of the American family from the colonial period to the present. The course will draw upon textual sources and oral histories in examining changes in families from the colonial period through the nineteenth and twentieth centuries. Recommended prerequisite: Hst 201 or

202, or Sophomore Inquiry (American Studies). Recommended prerequisite: upper-division standing.

***Hst 345**

Colonial America, 1607-1756 (4)

Survey of British North America from the planting of the English colonies to the eve of the Seven Years' War. Topics include relations between Europeans and Native Americans, women's status and roles, religious ferment, constitutional development, and the colonial economy. Recommended prerequisite: upper-division standing.

***Hst 346**

The American Revolution, 1756-1800 (4)

Survey of the American Revolution from its origins to the Early Republic. Topics include the pre-Revolutionary crises, the War of Independence, the Confederation, and the framing of the Constitution. Recommended prerequisite: upper-division standing.

***Hst 347**

Antebellum America, 1800-1850 (4)

Survey of the history of the United States from 1800 to 1850. Topics include the War of 1812, U.S. territorial expansion, Jacksonian democracy, Indian removal, reform movements, the transportation revolution, and the development of the market economy. Recommended prerequisite: upper-division standing.

***Hst 348**

Slavery, the American Civil War, and Reconstruction, 1850-1877 (4)

Survey of the history of slavery in the United States. Topics include the political, social, and economic circumstances that helped bring on the American Civil War, as well as the military history of the war, the consequences of the conflict, and the reconstruction of the Union. Recommended prerequisite: upper-division standing.

Hst 349

United States Indian Policy (4)

Examines the history of the United States government's policy toward the Indian nations of North America. In particular, considers the Indian policies of the European imperial powers, the federal government's creation and implementation of Indian policy, the conflicts and relationships between tribal nations and the state and federal governments, the origin of the Indian sovereignty movement, and the construction of tribal sovereignty by the state and federal courts of the United States. Recommended prerequisite: upper-division standing.

Hst 350

English History from 1066 to 1660 (4)

Designed to survey the history of England from the conquest in 1066 through the English Civil Wars and the ensuing period when England was without its monarchy in the mid-seventeenth century. Using a lecture/discussion format, explores significant events and developments in the governance, society, economy, and religion of England during this period. Recommended prerequisite: upper-division standing.

Hst 351

English History from 1660 to the Present (4)

Designed to survey the history of England from the restoration of the monarchy in 1660 to the present time. Using a lecture/discussion format, explores significant events and developments in

the governance, society, economy, and religion of England during this period. Recommended prerequisite: upper-division standing.

Hst 352

European Women's History to 1700 (4)

An upper-division course designed to survey the history of women and the changing social construction of gender in Europe from c. 1000 to c. 1700. Explores the impact of social, intellectual, economic, and political changes, as well as significant events such as the Black Death and recurring religious change. Recommended prerequisite: upper-division standing.

***Hst 354**

Early Medieval Europe: 300-1100 (4)

A survey of political, cultural, intellectual, religious, social, and economic aspects of this 800-year period, including among other topics the decline of Roman power in Western Europe, the spread of Christianity, the rise of the Franks, the Carolingian Empire, the growth of feudal ties, and the gradual creation of a high-level civilization. Recommended prerequisite: upper-division standing.

***Hst 355**

Late Medieval Europe, 1100-1450 (4)

An examination of the late Middle Ages through primary sources with an emphasis on cultural, social, political, and intellectual transformations. Subjects to be treated include the twelfth-century cultural "renaissance," the emergence of the European state and papal monarchy, the rise of religious dissent and anti-Semitism, the transformation of medieval spirituality, the Crusades, European expansion and external encounters, growth of cities and the university, the debate between faith and reason, the Black Death, and late medieval decline. Recommended prerequisite: upper-division standing.

***Hst 356**

Renaissance and Reformation Europe, 1400-1600 (4)

Surveys the cultural, social, intellectual and political aspects of the European Renaissance and Reformation. Emphasis placed on learning to read and analyze contemporary source materials, and examination of the growth of urban culture and civic humanism in Italy, the rediscovery of classical literature and philosophy, court life and mores, the rise and institutionalization of religious reform, the institutional transformations of Church and State, and European exploration and exploitation of the Atlantic. Recommended prerequisite: upper-division standing.

Hst 357

Europe from Reformation to Revolutions (4)

Major developments in European social, political, economic, cultural, and intellectual history from the late 16th through the mid-19th centuries. Recommended prerequisite: Hst 102 or upper-division standing.

Hst 358

Europe's Long 20th Century (4)

Major events (World Wars I and II), socio-political movements (communism, fascism, Nazism), people, and themes in European history from the mid-19th century to the present. Recommended prerequisite: Hst 103 or upper-division standing.

***Hst 359**

Early Modern France (4)

A survey of the history of France during the Reformation, the Age of Absolutism, and the Enlightenment, 1515-1778. Recommended prerequisite: upper-division standing.

***Hst 360**

The French Revolution and Napoleon (4)

A survey of the history of France during the Revolution and Napoleonic era, 1778-1815. Recommended prerequisite: upper-division standing.

***Hst 365, 366**

Latin America (4, 4)

A survey from pre-Columbian times to the present. Hst 365: Period of discovery and conquest, colonial institutions, the age of reform. Hst 366: Independence and rise of the new nations, the recent period. Recommended prerequisite: Hst 101, 102, or Sophomore Inquiry (Latin America).

***Hst 385, 386**

The Middle East in Modern Times (4, 4)

A survey of social, cultural, and political trends in the Middle East from 1300 to the present. Hst 385: the Ottomans, Safavid Iran, the Age of later Islamic empires, Middle East Reforms, imperialism in the 18th and 19th centuries. Hst 386: Middle Eastern industrial society, mass culture and nation states in the 20th century. Recommended prerequisite: upper-division standing.

Hst 387

Science in Society: Historical Perspectives (4)

Examines the interplay between two different aspects of science: science understood as a system of knowledge about the world and science understood as the social institutions (disciplines, laboratories, etc.) by which that knowledge is produced and transmitted. Through reading, discussion, lectures, and independent research, the course explores ways in which the scientific endeavor has affected and been affected by the political, social, and cultural milieu in which it is carried out. The primary focus is on modern Europe and America. Recommended prerequisite: upper-division standing.

Hst 399

Special Studies (Credit to be arranged.)

Hst 401/501

Research (Credit to be arranged.)

Consent of instructor.

Hst 404/504

Public History Internship (4)

Intensive, on-the-job internships with public agencies, private businesses, non-profit firms, and other groups in public history work. Each internship is by special arrangement and terms. Recommended prerequisite: Hst 496/596, or consent of instructor.

Hst 405/505

Reading and Conference (Credit to be arranged.)

Consent of instructor. Directed reading for honors students and history majors.

Hst 407/507

Seminar (Credit to be arranged.)

Study and application of the techniques of historical research and writing. Prerequisite: Hst 300 or consent of instructor.

Hst 409/509**Public History Seminar (Credit to be arranged.)**

Engages students in advanced investigation of special topics in public history work, including archives, oral history, project design, history on the Web, and others. Seminars will feature technical readings, group work, peer evaluation, and written projects. Required for graduate students taking the public history track option.

Hst 410/510**Selected Topics (Credit to be arranged)*****Hst 412/512****Topics in African/Caribbean History and Culture (4)**

An in-depth exploration of selected topics in African and/or Caribbean cultural history. Special attention will be given to thematic issues of broad application to the understanding of cultural interaction, continuity, and change. Recommended prerequisite: upper-division standing. This course is the same as BSt 450/550; course may be taken only once for credit.

Hst 413/513**Topics in Women, Gender, and Transnationalism (4)**

Discussion-based course explores historical work that frames women's experiences and resistance to enslavement, colonialization, and highly exploitative paid work in world-wide labor markets as "transnational" phenomenon. Course participants will examine several case studies of women in transnationalist discourse and politics as they intersect with U.S. history. Central themes in these case studies are questions of identity within and beyond the nation-state as well as feminist cultural/political interventions around issues of race, nation, and sex. Recommended prerequisite: upper-division standing.

Hst 415/515*Topics in Greek History (4)**

An advanced look at specific topics in Greek history from the Bronze Age to the death of Cleopatra. Topics will include social, political, economic, intellectual, and religious history. The subject matter will vary from term to term. (Maximum number of credits is 12; 4 credits each for three courses with different topics.) Recommended prerequisite: Hst 315, Sophomore Inquiry (Greek Civilization) or upper-division standing.

Hst 416/516*Topics in Roman History (4)**

An advanced look at specific topics in Roman history from the Etruscans to the Dark Ages. Topics will include social, political, economic, and intellectual history. The subject matter will vary from term to term. (Maximum number of credits is 12; 4 credits each for three courses with different topics.) Recommended prerequisite: Hst 316 or upper-division standing.

Hst 420/520*Topics in Early Modern Japanese History (4)**

Selected themes in Tokugawa (1600-1850) history, including rural life and urbanization, merchants and commerce, political thought and institutions, women and family life, neo-Confucianism, religious beliefs and practices,

popular culture, arts, and literature. (Maximum number of credits is 12; 4 credits each for three courses with different topics.) Recommended prerequisites: upper-division standing, Hst 320.

Hst 421/521*Topics in Modern Japanese History (4)**

Selected themes in modern Japanese history, including the construction of the nation-state, modernization, Japan's drive to great power status, Japan's emergence as an imperialist power, state-society relations, and modernity outside Europe. (Maximum number of credits is 12; 4 credits each for three courses with different topics.) Recommended prerequisite: upper-division standing, Hst 320 or 321.

Hst 422/522*Topics in Postwar Japanese History, 1945-present (4)**

Selected themes in postwar Japanese history, including the Occupation reforms (1945-52) and Japan's place in the Cold War system, the so-called "economic miracle," the development of a mass consumer culture, and U.S.-Japan relations. (Maximum number of credits is 12; 4 credits each for three courses with different topics.) Recommended prerequisite: upper-division standing, Hst 321.

Hst 423/523*Topics in Chinese Social History (4)**

This course will examine institutions and themes—relating to the family, urban and rural life, education and the like—in Chinese social history. The subject matter will vary from term to term. (Maximum number of credits is 12; 4 credits each for three courses with different topics.) Recommended prerequisite: Hst 320.

Hst 424/524*Topics in Chinese Thought and Religion (4)**

Study of selected topics in intellectual and cultural history related to Confucianism, Buddhism, Daoism, and other philosophical and religious constructs. The subject matter will vary from term to term. (Maximum number of credits is 12; 4 credits each for three courses with different topics.) Recommended prerequisite: Hst 320.

Hst 425/525**Modern China (4)**

History of China from decline of imperial system through century of revolution that culminated in founding of People's Republic of China in 1949. Post-1949 focus on critical periods and issues in state-society relations, economic and political reform, and cultural changes, including global posture and relations with the West. Recommended prerequisite: Hst 320 or 321.

Hst 427/527**Topics in the History of Science (4)**

An in-depth investigation of a selected theme in the history of science and its cultural, social, or political relations. The subject matter will vary from term to term; topics include: science and religion, science under Nazism, science and Modernism, Darwinism and social Darwinism, Scientific Revolution, and changing physical world pictures. Some previous study in history is recommended; a background in science is welcome, but not required or expected. (Maximum number of credits is 12; 4 credits each for three courses with different topics.) Recommended prerequisite: upper-division standing.

Hst 429/529**Topics in U.S. Cultural History (4)**

Explorations of particular topics in modern U.S. cultural history such as the 1920s Ku Klux Klan, American Countercultures from 1945 to 1960, and Populist Insurgence. Recommended prerequisite: Hst 327, 328, or 329.

Hst 430/530, 431/531, 432/532*U.S. Cultural History (4, 4, 4)**

The relation of cultural attitudes, values, and belief to the American historical experience. Hst 430/530: 1600-1860, European legacy and Native Americans; Puritanism and mission; race, class, and ethnicity in Colonial America; American Enlightenment and Revolution; Cultural Nationalism in the New Republic; Industrial Ethic and Pastoralism; Jacksonian Democracy and the Cult of the Self-Made Man; Manifest Destiny and Native Americans; Slavery and African American Culture; Protestant Evangelicalism, Social Reform, Abolitionism, and Feminism. Hst 431/531: 1860-1945, Cultural Civil War and Reconstruction; Age of Incorporation, Labor Reform, and Utopian Thought; Populism and the Crisis of the 1890s; Progressive Purity Reform and Intellectual Ferment; Two Cultures of the 1920s; Depression Realism and Radicalism; World War II and the Judeo-Christian Consensus. Hst 432/532: Anti-Communist, Nationalist, and Anticorporate Insurgence in the 1950s; Antiwar, Racial, Counterculture, and Feminist Ferment in the Protest Era; New Age and Postmodernist Thought; Populist Conservatism and Traditional Values, 1980-present. Recommended prerequisites: Hst 430/530: Hst 201; Hst 431/531: Hst 202, 327, 328; Hst 432/532: Hst 202, 328, 329.

Hst 433/533, 434/534*Colonial American and U.S. Social and Intellectual History (4, 4)**

Hst 433/533: 1600-1860. 434/534: 1860-present. Each term will examine three or four aspects of American social and intellectual history—such as race, class, religion and philosophy, ideology and politics, community, region, or labor. Recommended prerequisite: Hst 433: Hst 201, Sophomore Inquiry (American Studies), or consent of instructor; Hst 434: Hst 201, Sophomore Inquiry (American Studies).

Hst 435/535, 436/536, 437/537*American Diplomatic History (4, 4, 4)**

The history of American involvement in world affairs from colonial times to the present. Hst 435/535: Emphasis on America as the object of European diplomacy; winning and maintaining independence, continental expansion, and civil war. Hst 436/536: American intervention in East Asia and the Caribbean, Imperialism, and World War. Hst 437/537: a second World War, Cold War, containment, Korea, Vietnam, and American globalism. Recommended prerequisite: upper-division standing.

†Hst 438/538**American Economic History: the First Century (4)**

The economic background of the War of Independence and the seeds of the Civil War. Industrialization, urbanization, and development of the frontier. Rise of big business and organized labor. Laissez faire, federalism, and the gradual emergence of the national govern-

† Also offered as Ec 456/556, 457/557.

ment in economic policy. Changes in foreign trade and in the international position of the U.S. Recommended prerequisites: Ec 201, 202.

† **Hst 439/539**

American Economic History: the 20th Century (4)

Economic impact of U.S. involvement in World War I. Postwar structural changes. Waning of laissez faire. Causes of the Great Depression. Economic policies of Hoover and Roosevelt administrations. The New Deal reforms. World War II and emergence of the administered system. Evolution of the mixed economy and growing role of the government. The industrial-military complex and the social imbalance. Recommended prerequisites: Ec 201, 202.

* **Hst 440/540, 441/541**

American Environmental History (4, 4)

Hst 440/540: A survey of North American history to 1900 from an environmental perspective with special reference to the development of environmental thought, interdisciplinary topics in environmental history, and the history of ecological thinking. Hst 441/541: A survey of North American history since 1900 from an environmental perspective with special reference to conservation and environmentalism, interdisciplinary topics in environmental history, political action, and contemporary environmental thought. Recommended prerequisite: upper-division standing.

* **Hst 442/542**

Race, Class and Gender in the American West (4)

Examines the trans-Mississippi West as a cultural meeting ground and explores the racial, class, and gender implications of new migrations to the region. Particular attention will be placed on the arid West and human responses to landscape. Recommended prerequisite: Hst 201, 202 or upper-division standing.

Hst 443/543

The American West: A Political and Economic History (4)

Focuses on the major political and economic changes in the trans-Mississippi West, from the 17th century to the late 20th century, with special attention to the increasing power and influence of the federal government and corporate institutions after 1870. Recommended prerequisite: upper-division standing.

Hst 444/544

History of the Pacific Northwest (4)

The social, cultural, economic, and political aspects of the development of civilization in Oregon and Washington. The history of the region is related to national and international contexts. Recommended prerequisite: Hst 201, 202.

* **Hst 445/545**

History of Portland (4)

The historical growth of Portland and its metropolitan region, with major attention given to the 20th century. Emphasis is placed upon the process of urbanization and the consequences of the past decisions and actions as they relate to recent developments. Recommended prerequisite: upper-division standing.

Hst 446/546

Topics in the History of American Professions (4)

Historical analysis of the roots and development of the intellectual, economic, social, and political power and authority of representative

professions in America and the West. Topics include: Foundations of American Medicine; American Medicine in the Twentieth Century; American Lawyering; American Technology. Course may be repeated for credit with different topic. Recommended prerequisite: upper-division standing.

* **Hst 447/547, 448/548, 449/549**

American Constitutional History I, II, III (4, 4, 4)

Hst 447/547: Examines the intellectual origins, creation, and ratification of the American Constitution and the early efforts of the U.S. Supreme Court to construe that document. Covers the period 1787-1860 and focuses primarily on the Marshall and Taney eras. Prerequisite: upper-division standing.

Recommended prerequisite: Hst 201. Hst 448/548: Examines the U.S. Supreme Court's decisions in the period between 1860 and 1932. In particular, the Court's emasculation of the Reconstruction Amendments and its role in the development of modern American industrial capitalism. Prerequisite: upper-division standing. Recommended prerequisite: Hst 202.

Hst 449/549: Examines the civil liberties and civil rights decisions of the U.S. Supreme Court in the 20th century. Recommended prerequisite: upper-division standing.

* **Hst 450/550**

Medieval England (4)

Examines political, religious, social, and economic aspects of the history of England from approximately 800 to the end of the 14th century. Recommended prerequisite: upper-division standing or permission of instructor.

Hst 451/551

Early Modern England (4)

Examines political, religious, social, and economic aspects of the history of England from the 15th through the 17th centuries. Recommended prerequisite: upper-division standing.

Hst 452/552

Topics in the History of European Women (4)

Examines selected aspects of the history of European women, focusing on one or more specific regions, topics, and/or time frames. Possible topics include aspects of the history of women and religion, women and work, women accessing power, and gender and religious identity. Course may be taken more than once with permission of instructor. Recommended prerequisite: upper-division standing.

* **Hst 453/553**

The Medieval City: Communities of Conflict and Consensus (4)

Emphasizes the social and cultural history of the medieval city from ca. 300-1500. Proceeding chronologically and thematically, explores how contemporaries imagined cities and urban life; the formation of civic consciousness and identity in feudal Europe; the commercial revolution and its cultural consequences; family and domestic life; the experience of marginalized elements; the construction, regulation, and function of urban space; and the role of spectacle, ceremony, and ritual, all as means to assess how the urban community mediated conflict and sought elusive consensus. Recommended prerequisites: Hst 101, 354, or 355 or upper-division standing.

Hst 454/554

Topics in Medieval History (4)

Examines selected topics in the social, cultural, and /or religious history of the European Middle Ages, spanning the period from roughly 300-1450 C.E. Topics will vary, but may include the study of sanctity and society, religious dissent and reformation of the church, holy war and crusade, regional and national political histories, cross-cultural studies, and other subjects. (Maximum number of credits is 12; 4 credits each for three courses with different topics.) Recommended prerequisites: Hst 101, 354, or 355 or upper-division standing.

* **Hst 455/555**

Topics in Renaissance History (4)

Identifies and examines those special aspects of Western European civilization that mature roughly between 1300 and 1550 and that begin to set it apart from the medieval era. Not a survey of life during a period of time but a study of selected phenomena. Topics include the revival of antique (above all Latin and Greek) letters and attitudes, types of Humanism, new education ideals, secular outlook, the functions of Renaissance patrons, political theory and the growth of the "early modern state," Neoplatonism, and the spread of the Renaissance from Italy to Northern Europe. (Maximum number of credits is 12; 4 credits each for three courses with different topics.) Recommended prerequisite: upper-division standing.

Hst 456/556

Religious Change in Sixteenth Century Europe (4)

Examines the causes, characteristics, and consequences of the revolutionary changes in European Christianity that occurred during the 16th century: changes that are generally labeled "The Reformation." Recommended prerequisite: upper-division standing.

* **Hst 458/558**

Modern Germany (4)

Examines aspects of the development of German political, social, and cultural life during the 19th and 20th centuries. Recommended prerequisites: Hst 103, 358. For 558: graduate standing.

* **Hst 460/560**

Topics in European Intellectual History (4)

Examines a selected theme in the development of European thought in its social context; format includes lecture and the analysis and discussion of primary texts. May be taken a second time for credit (maximum 8 credits) with a different topic. Recommended prerequisites: upper-division standing for 460, graduate standing for 560.

* **Hst 462**

Amazon Rain Forest (4)

Examines different ways in which the Amazon has been perceived through time. This course is the same as Intl 462; course may only be taken once for credit. Recommended prerequisite: upper-division standing.

* **Hst 463**

Modern Brazil (4)

Examines such topics as slavery, abolition, messianism, banditry, the Amazon, race, military rule, and democratization in the making of modern Brazil. This course is the same as Intl 463; course may only be taken once for credit. Recommended prerequisite: upper-division standing.

† Also offered as Ec 456/556, 457/557.

Hst 464/564**Indians of the Pacific Northwest (4)**

Explores the history of peoples native to the Pacific Northwest with a special emphasis on natural resource allocation and the relationships between federal, state, and tribal governments in the 19th and 20th centuries. Recommended prerequisite: Hst 201, 202 or Hst 338U.

Hst 465/565*Twentieth Century Latin America (4)**

Recent political, social, and economic developments with emphasis on the period since World War II. Recommended prerequisite: Hst 365, 366, or Sophomore Inquiry (Latin America).

Hst 468/568, 469/569, 470/570*History of Mexico (4, 4, 4)**

Hst 468/568: A study of Mexico's beginnings from pre-Columbian times through the colonial period. The origins of Mexican culture, society, economy, and political institutions will be examined in the context of Hispanic and indigenous contributions. Hst 469/569: A study of Mexico's history from the revolutions for independence until 1876. Emphasis will be placed upon the development of constitutional government, the era of reform, foreign interventions, and the restoration of the republic. Hst 470/570: Mexico's emergence as a modern nation during the Porfirian dictatorship. The 20th century revolutionary upheaval and consolidation. Recommended prerequisite: Hst 365 or 366.

Hst 475/575*History of Russia: Origins to Peter The Great, 800-1700 (4)**

Kievan Rus', the "Mongol Yoke," Muscovy, and the beginnings of empire. Analysis of primary sources and historiographical debates. Emphasis on political, social, and cultural aspects. Recommended prerequisite: upper-division standing.

Hst 476/576*History of Russia: Imperial, 1700-1917 (4)**

This course traces the Romanov dynasty and its subjects until its fall. Analysis of primary sources and historiographical debates. Emphasis on political, cultural, and social aspects, especially on the successive attempts at reform, and intellectual self-definition of the nation and its classes. Recommended prerequisite: upper-division standing.

Hst 477/577*History of Russia: Soviet Union and its Fall, 1917-Present (4)**

Russian Revolution, the Civil War, NEP, Stalinism, Khrushchev, Brezhnev, Gorbachev, and the dissolution of the Soviet Union. Analysis of primary sources and historiographical debates. Emphasis on political, social, and cultural aspects. Recommended prerequisite: upper-division standing.

Hst 478/578, 479/579*Russian Cultural and Intellectual History (4, 4)**

Analysis of primary sources. Hst 478/578: 19th century intelligentsia. Hst 479/579: 20th century mass culture—films, novels, sport, and music. Recommended prerequisite: upper-division standing.

Hst 485/585, 486/586*The Ottoman World and Modern Turkey (4, 4)**

Study of social, cultural, and governmental patterns in Ottoman and Turkish society, from

Hungary to the Red Sea, from the 13th century to the present. Hst 485/585: A study of social, cultural, and governmental patterns in Ottoman society, from the rise to world empire in the Balkans and Middle East of the 13th through 16th centuries, to the Age of Doubt and Tulip Period of the 17th and 18th centuries. Hst 486/586: A study of 19th and 20th century modern Turkey and revolutionary Westernization in the Middle East. Recommended: upper-division standing.

Hst 487/587*Palestine and Israel (4)**

A critical review of the 19th and 20th century social, cultural, economic and political factors behind the formation of two modern Middle Eastern nations, Palestine and Israel. Recommended prerequisite: upper-division standing.

Hst 488/588*Modern Arabia (4)**

A survey of the history of the Arabian Peninsula in the 19th and 20th centuries. Emphasis will be on socio-economic and governmental institutional change with discussion of changing cultural values. The role of the British and Ottoman empires, Islamic reformism, oil, and the emergence of nation states (Saudi Arabia, Yemen, Oman, and the Gulf States). Recommended prerequisite: upper-division standing.

Hst 495/595**Comparative World History (4)**

Comparative examination of important themes in world history. Both the themes and regional focus vary each term, and themes may be drawn from any time period. Maximum number of credits is 12: 4 credits each for three courses with different topics. Graduate credit requires a substantial research paper. Recommended prerequisite: upper-division standing.

Hst 496/596**Introduction to Public History (4)**

An introduction to the field of public history with special emphasis on the research methods, procedures, and work in the practice of public history, from archival management to historic preservation and museum studies. Taught in cooperation with the professional staff of the Oregon Historical Society. This course is a prerequisite for Hst 404/504, Public History Internships.

Hst 497/597*Film and History (4)**

The study of selected topics of modern history through the viewing and analysis of important documentaries and feature films. Emphasis is on the application of techniques of historical source criticism to the varied information preserved and transmitted in cinematographic form. The subject matter will vary from term to term. (Maximum number of credits is 12; 4 credits each for three courses with different topics.) Recommended prerequisite: upper-division standing.

Hst 500**Introduction to the Master's Program in History (4)**

An introduction to the professional study of history and to the writing of the master's thesis. Intended for new or recently entering graduate students in history.

Hst 503**Thesis (Credit to be arranged.)****Hst 509****Practicum (Credit to be arranged.)****Hst 511****Public History Lab (3)**

Lab courses will vary from six to eight weeks and focus on a specific sub-field in Public History. Working professionals will instruct students in the latest techniques used in public history work. Lab courses are required for graduate students taking the public history track in the M.A. in history. Prerequisite: Hst 496/596.



International Studies

224 East Hall
725-3455
www.intl.pdx.edu/ISP/ISP.htm

**B.A.
Minor
Certificate in Canadian Studies
Certificate in European Studies
Certificate in Latin American Studies
Certificate in Middle East Studies**

The International Studies program offers a B.A. degree based on an interdisciplinary curriculum that provides both a global perspective and a comprehensive view of a selected geographic region of the world. This degree affords an excellent foundation for careers in which an understanding of international economic, political, social, and cultural affairs is of importance; it also provides a solid foundation for graduate work in the field.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. In addition to the general University requirements for a degree found on page 12, majors must complete an individualized curriculum in their areas of geographic concentration, to include:

	Credits
International Studies	29
Intl 101 Introduction to International Studies.....	4
† Intl 2xx Introduction to Regional Studies.....	4
Intl 395 Colloquium (one credit in each of three terms).....	3
‡ Intl 396 The United States and the World.....	4
Intl 407 Seminar.....	4
‡ Intl 471 Understanding the International Experience.....	4
§ Intl 499 Senior International Experience.....	6
Connected Learning	24
At least 24 upper-division credits from adviser-approved courses selected from departments and programs in the College of Liberal Arts and Sciences, the School of Business Administration, the Graduate School of Education, the School of Fine and Performing Arts, and the College of Urban and Public Affairs. Lists of appropriate Connected Learning courses are available in the department and by email: pjudson@pdx.edu	

and	
Regional Focus	24
At least 24 upper-division credits from adviser-approved, area-specific courses appropriate to the student's regional focus; plus three years [§] of language study (or equivalent) appropriate to the regional focus: Africa, Asia, Europe, Latin America, or the Middle East.	
or	
Regional/Thematic Focus	24
At least 12 upper-division credits in adviser-approved, area-specific coursework, and 12 upper-division credits in adviser-approved interdisciplinary coursework related to a theme of international significance approved by an adviser; plus three years [§] of language study (or equivalent) appropriate to area-specific coursework.	
Total: (plus from 0 to 42 depending on language study)	77-119

All courses used to satisfy the departmental major requirements, whether taken in the department or elsewhere, must be graded C or above.

Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling department major requirements.

The approved elective courses which may be used to complete the above curriculum are determined according to the geographic region of study that a student selects.

Academic Adviser: Patrice Hudson, 503-725-3455

Currently, five regions of concentration are available:

General Advising: Kimberly Brown (Applied Linguistics), 503-725-8194; Birol Yesilada (Political Science), 503-725-3257

Africa: Kofi Agorsah, adviser, 503-725-5080

Asia: Patricia Wetzel, adviser, 503-725-5277 or 503-725-8561

Europe: Martha W. Hickey, adviser, 503-725-8728

Latin America: Shawn Smallman, adviser, 503-725-5085

Middle East: John Damis, adviser, 503-725-3111

Information on recommended courses is available from advisers. Majors should meet regularly with advisers beginning no later than the first term of their sophomore year.

Requirements for minor. To earn a minor in international studies a student must: (1) demonstrate competence in an appropriate foreign language either by completing the second year of the language in the final term or by passing a departmentally administered proficiency exam at the same level; and (2) complete 31 credits (8 of which must be taken in residence at PSU and 11 credits of which must be upper-division) to include the following:

	Credits
International Studies	15
Intl 101 Introduction to International Studies (4)	
Intl 395 Colloquium (one credit in each of three terms) (3)	
Intl 396 The United States and the World (4)	
Intl 407 Seminar (4)	
Connected Learning (adviser-approved area-specific or thematic courses).....	16
Total	31

Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling department minor requirements.

Certificates

The University awards certificates for language and area specialization to students who have completed, or are completing, the requirements for a bachelor's degree in any other field. Certificates are currently available in European Studies, Latin American Studies, and Middle East Studies. The specific courses needed for a certificate in each area differ; interested students should consult the International Studies Program in 224 East Hall.

Students in both the International Studies and certificate programs are encouraged to consider overseas study opportunities available through the Office of International Education Services, 101 East Hall.

Language and area studies certificate programs focus on the study of a group of countries or a geographical area having common linguistic and/or cultural characteristics. The course of study is designed to broaden the student's understanding of a particular world area.

† Students may not substitute UnSt 2xx for Intl 2xx (and vice versa); an appropriate mentor section is required.

‡ Students may substitute Ec 340, Hst 435/436/437, PS 345, 445, 454 or Soc 320 for Intl 396 with approval of adviser; Ling 471 for Intl 471 with approval of adviser.

§ Substitutions for, or waivers of, all other Intl courses must be approved by the program director as well as the adviser.

¶ The INTL 499 Senior International Experience requirement may be fulfilled by taking an UnSt 421 Capstone from the INTL list of approved courses having a significant international component.

∇ Demonstration of three years' foreign-language equivalency may be through examination; three years' coursework includes a departmentally administered proficiency examination.

Students must take 30 credits (two years) of one adviser-approved language appropriate to the geographic area of concentration (or demonstrate equivalent proficiency in that language); and they must successfully complete 30 credits of specified area courses.

Courses

*Courses with an asterisk may not be offered every year.

Intl 101

Introduction to International Studies (4)

A survey of the main concepts, analytical tools, fields of study, global problems, and cross-cultural perspectives that comprise international studies.

In-depth interdisciplinary or topical study of one of the regional foci in the International Studies degree program. Please be sure to register for a corresponding mentored inquiry section:

Intl 211

Introduction to African Studies (4)

Intl 216

Introduction to Asian Studies (4)

Intl 226

Introduction to European Studies (4)

Intl 240

Introduction to Latin American Studies (4)

Intl 247

Introduction to Middle Eastern Studies (4)

***Intl 317**

Topics in Asian Thought (4)

Study of the religious and ethical traditions of Asia including, but not limited to, Buddhism, Confucianism, Hinduism, and Islam, their social and cultural importance, and their ties to political thought and history.

Intl 321

Globalization and Identity: Humanities (4)

Examines how U.S. and Asian societies define the meaning of globalization vis-à-vis themselves and each other using source materials from the humanities.

Intl 322

Globalization and Identity: Social Science (4)

Examines how U.S. and Asian societies define the meaning of globalization vis-à-vis themselves and each other using source materials from the social sciences.

Intl 323

Tradition and Innovation: Humanities (4)

Examines how U.S. and Asian societies employ the meanings of "tradition" and "innovation" to define themselves and view each other. Looks at tradition and innovation in both societies through plays, film and Asian and American literature.

Intl 324

Tradition and Innovation: Social Science (4)

Examines how U.S. and Asian societies employ the meanings of "tradition" and "innovation" to define themselves and view each other. Looks at tradition and innovation in both societies through historical, economic, and political science perspectives.

Intl 331

Women in the Middle East (4)

Aims to explore the role and status of women in the contemporary Middle East with respect to institutions such as the family, law, education, work, and politics—areas which intersect and overlap with broader cultural questions about women and their place in tradition, modernity, nation-building, Islam, and the West. This course is the same as FL 331 and WS 331, may only be taken once for credit.

Intl 395

Colloquium (1)

Lectures by PSU and visiting scholars on major world issues.

Intl 396

The United States and the World (4)

Interdisciplinary study and analysis of the role of the United States in world affairs with emphasis on the twentieth and twenty-first century, relations between the U.S. and the Third World, the era of the Cold War, American globalism, diplomatic, economic, and geopolitical issues.

Intl 399

Special Studies (Credit to be arranged.)

Intl 401

Research (Credit to be arranged.)

Intl 404

Cooperative Education/Internship (Credit to be arranged.)

Intl 405

Reading and Conference (Credit to be arranged.)

Intl 407

Seminar (4)

Reading and discussion about an interdisciplinary topic in international affairs. Restricted to seniors with an International Studies major or minor.

Intl 410

Selected Topics (Credit to be arranged.)

Intl 452

The European Union (4)

Focuses on how the EU has evolved since its beginnings in the 1950s, on its present-day organization and functions, and on how the member countries interact in making EU policies for jointly regulating their internal economies and societies as well as how the EU members also try to manage their relations with the rest of the world. This course is the same as PS 452; course may only be taken once for credit.

***Intl 460/560**

Political Development in Modern Turkey (4)

Designed to provide students with an in-depth

study of political development literature with a focus on modern Turkey. Examines how a modern Turkish republic emerged from the ashes of the Ottoman Empire and evaluates stages of political development during the first, second, and third republic. Finally, assesses the implications of Turkey's new geopolitics (post Cold War) on Turkish political and economic development from a global perspective. This course is the same as PS 460/560; may only be taken once for credit.

***Intl 461/561**

Politics of Economic Reform in Modern Turkey (4)

Course examines the politics of planned economic growth under the Republican Peoples Party, transition to the import-substituting growth model during the post-WWII era, problems associated with economic stagnation in the 1970s, and transformation of the Turkish economy during the 1980s and 1990s. The last two decades provide important insight into how politics and economics (domestic as well as international) converge in shaping Turkey's economic growth strategies. This course is the same as PS 461/561; may only be taken once for credit.

***Intl 462**

Amazon Rain Forest (4)

Examines different ways in which the Amazon has been perceived through time. This course is the same as Hst 462; course may only be taken once for credit.

***Intl 463**

Modern Brazil (4)

Examines such topics as slavery, abolition, messianism, banditry, the Amazon, race, military rule, and democratization in the making of modern Brazil. This course is the same as Hst 463; course may only be taken once for credit.

Intl 471

Understanding the International Experience (4)

Examination of communication-based dimensions of an international or intercultural experience, including teaching English to speakers of other languages. Development of strategies and activities required to meet the challenges of teaching, working, or doing research in an international/ intercultural setting. Prerequisite: upper-division or postbac academic standing. All linguistics students must register for Ling 471/571 which includes a zero-credit lab, however, this course is also offered as BSt 471. Course may only be taken once for credit.

† Intl 499

Senior International Experience (6)

A service learning and/or community-based learning experience in an international or intercultural setting, in a group-supervised, team-centered format, within either a study-abroad program or a local project (or both) with an appropriate international agency, business, community, or non-profit organization.

† The INTL 499 Senior International Experience requirement may be fulfilled by taking an UnSt 421 Capstone from the INTL list of approved courses having a significant international component.

Mathematics and Statistics

334 Neuberger Hall
503-725-3621
www.mth.pdx.edu/

B.A., B.S. in Mathematics
Minor in Mathematics
Minor in Mathematics for Middle School Teachers
Teacher Licensing Requirements
M.A., M.S. in Mathematics
M.S. in Statistics
M.A.T., M.S.T. in Mathematics
Ph.D. in Mathematical Sciences
Ph.D. in Mathematics Education
Ph.D. in Systems Science—Mathematics

Undergraduate programs

The mathematical sciences have long provided the necessary languages of the physical sciences, but are now also recognized as important components of study for students in computer science, social sciences, business administration, education, and the biological sciences. Mathematics and statistics are also disciplines in themselves and may be studied purely for the excitement and discovery it brings to those who study it. To meet these needs the department offers an array of courses in pure and applied mathematics and statistics.

Students, prospective students, and all persons having an interest in the department are welcome at the office and are encouraged to visit the Web site. The Web site provides information about the department's faculty, programs, courses, other services, and its current activities.

Admission requirements

In order to help students plan their programs the Mathematics and Statistics Department provides placement assistance and the opportunity to meet with an adviser. All students are urged to avail themselves of these services, especially those students who are enrolling in their first mathematics or statistics course.

Students interested in majoring in mathematics are urged to meet with a department adviser. Students who have decided to major in mathematics should inform

both the department and the registrar's office of that decision. Mathematics majors are encouraged to participate in the activities of the department and to meet on a regular and continuing basis with a departmental adviser.

Degree requirements

Requirements for major. The degree program requires a basic core of courses, but it also has the flexibility that allows students to pursue special areas of interest in mathematics. The program is designed to provide a foundation for more advanced work and/or a basis for employment in government, industry, or secondary education. A joint degree in mathematics with computer science, business administration, economics, physics, or some other area may give a student better opportunities for employment upon graduation.

The department attempts to offer as many courses as possible after 4 p.m. on a rotating schedule so that a degree may be pursued by either day or evening enrollment.

In addition to meeting the general University degree requirements, the major in mathematics must complete the following requirements:

	Credits
Mth 251, 252, 253 Calculus I, II, III	12
Mth 254 Calculus IV	4
Mth 256 Differential Equations	4
Mth 261 Introduction to Linear Algebra	4
Mth 311, 312 Advanced Calculus	8
Mth 344 Group Theory	4
One of the following:	3-4
Mth 345 Ring and Field Theory	
Mth 346 Number Theory	
Mth 338 Modern College Geometry	
Mth 444 Advanced Linear/Multilinear Algebra	
† One approved two-term 400-level Mth or Stat sequence	6-7
† Two additional approved 400-level Mth or Stat courses	6-8
† Two additional approved Mth or Stat courses	6-8
Mth 271, CS 161 or CS 208	3-4
Total	60-67

All courses used to satisfy the departmental major requirements, whether taken in the department or elsewhere, must be graded C-, P, or above, but no more than 4 courses graded P will count toward these requirements. Transfer students majoring in mathematics are required to take a minimum of 15 credits of PSU upper-division mathematics or statistics courses in residence.

In addition to the specific required courses listed above, the following options are intended to help the student plan a program of study with a specific goal or career in mind.

Option I—Applied Mathematics. Recommended electives: Mth 322, 421, 422, 424, 425, 430, 451, 452, 470

Option II—Graduate School Preparation. Recommended electives: Mth 411, 412, 434, 435, 436, 441, 442.

Option III—Statistics. Recommended electives: Mth 322, 467, 468; Stat 461, 462, 463, 464, 465, 466.

Option IV—High School Teaching. Recommended electives: Mth 338, 346, 356, 481, 482, 486, 488; Psy 311; Ed 420. See Teaching Licensing Requirements below.

Option V—Actuarial Science. Recommended electives: CS 161; Mth 451, 452, 467, 468; Stat 461, 462, 463, 464, 465, 466; SySc 520, 521, 522.

Requirements for minor in mathematics. A student must complete the following program (3 upper-division courses must be taken in residence at PSU):

	Credits
Mth 251, 252, 253 Calculus I, II, III	12
Mth 254 Calculus IV	4
Mth 311 Advanced Calculus or Mth 344 Group Theory	4
‡ Four approved elective courses	12-16
Total	32-36

Only grades of C-, P, or above count toward satisfying the department minor requirements. No more than three courses with a grade of P may be counted toward these requirements.

Requirements for minor in mathematics for middle school teachers. This mathematics minor is intended for those who plan to enter a Graduate Teacher Education Program and be licensed in middle school mathematics (grades 5-9). A student must complete the following program (12 credits must be upper-division; 9 of these 12 upper-division credits must be taken in residence at PSU):

	Credits
Mth 211, 212, 213 Foundations of Elementary Mathematics I, II, III	12
Mth 490 Computing in Mathematics for Middle School Teachers	3
Mth 491 Experimental Probability for Middle School Teachers	3
Mth 492 Problem Solving for Middle School Teachers	3
Mth 493 Geometry for Middle School Teachers	3

† Approved electives are Mth 313, 322, 324, 338, 343, 345, 346, 356, 411, 412, 413, 420, 421, 422, 423, 424, 425, 430, 431, 432, 433, 434, 435, 436, 440, 441, 442, 443, 444, 445, 449, 451, 452, 453, 457, 458, 467, 468, 470, 471, 472, 481, 482, 483, 484, 485, 486, 487, 488; Stat 451, 452, 461, 462, 463, 464, 465, 466, 571, 573, 576, 577, 578. Check with the department for the list of approved Mth or Stat sequences and for additional courses, including omnibus-numbered courses, which may be approved as electives.

‡ Approved electives are Mth 256, 261, 311, 312, 313, 344, 345, plus any course approved as an elective for major credit.

Mth 494 Arithmetic and Algebraic Structures for Middle School Teachers.....	3
Mth 495 Historical Topics in Mathematics for Middle School Teachers.....	3
Mth 496 Concepts of Calculus for Middle School Teachers.....	3
Approved elective course (see an adviser).....	2-4
Total	35-37

Only grades of C-, P, or above count toward satisfying the department minor requirements. No more than three courses with a grade of P may be counted toward these requirements.

Licensure

Teacher licensing requirements. To receive a teaching license from PSU, after completing a baccalaureate degree a student must complete the Graduate Teacher Education Program (GTEP) through the Graduate School of Education.

Only grades of C-, P, or above count toward satisfying the mathematics requirements for teacher licensing.

Secondary education. Students planning to earn a secondary teaching license in mathematics must obtain a recommendation for admission to the GTEP from the Mathematics and Statistics Department. The student's program should include most of the courses required for the major and those listed in Option IV above.

Middle school education. Students planning to earn a middle school teaching license with an emphasis in mathematics should complete the courses Mth 211, 212, 213, 490/590, 491/591, 492/592, 493/593, 494/594, 495/595, and 496/596. Information about the Graduate Certificate Program in Mathematics for Middle School Teachers can be found in the Graduate Studies section, see page 69.

Elementary education. Students planning to earn an elementary teaching license must complete Mth 211, 212 before admission to GTEP.

Graduate programs

The Department of Mathematics and Statistics offers work leading to the degrees of Master of Arts, Master of Science, Master of Arts in Teaching, Master of Science in Teaching, the Ph.D. in Mathematics Education, and the Ph.D. in Systems Science–Mathematics.

Admission requirements

Master of Arts or Master of Science in mathematics, Master of Science in statistics, Master of Science in Teaching or Master of Arts in Teaching. In addition to

meeting the University admission requirements, students seeking regular admission status in master's programs are expected to have completed courses in linear algebra, abstract algebra, and analysis, and, for the M.A./M.S. programs, differential equations.

The M.A./M.S. programs are designed for the student who wishes to prepare for community college teaching, industrial work in mathematics, or further advanced work toward a Ph.D. in mathematics. The M.A.T./M.S.T. programs offer advanced training and specialized courses for secondary school teachers of mathematics.

Doctor of Philosophy in mathematical sciences. Applicants will be expected to have the equivalent of a bachelor's degree in mathematics or statistics containing an adequate background in computer science. Applicants with degrees in related disciplines will be considered provided the applicant demonstrates a strong mathematical proficiency. Applicants must follow the University admissions instructions for graduate applicants. In addition the GREs are required, both the general test and the subject test in mathematics.

The Ph.D. in mathematical sciences at Portland State University differs significantly from the traditional model of Ph.D. education in mathematical sciences. While mathematics is at the core, the program aims to develop professionals who have versatility, who are conversant in other fields, and who can communicate effectively with people in other professional cultures. The broad-based training will prepare candidates for industry, government, and higher education. The program prepares the candidate to be well grounded in his or her field, yet conversant with several subfields by dedicating approximately 25 percent of the credit hour requirements to professional development, cross-disciplinary experiences, and allied area coursework. Students take a concentration of allied area courses, outside the department, in one or more of mathematics and statistics many natural partner disciplines, including, computer science, engineering, physics, biology, economics, finance, urban studies and planning, medicine, or public health. The courses are chosen with the assistance of the allied area adviser to form a coherent area of study directly relevant to the student's goals.

Doctor of Philosophy in mathematics education. Candidates in this program must currently have (or complete during their program) a master's degree in mathematics equivalent to the M.S./M.A. degree or the M.S.T./M.A.T. degree at Portland State University. Applications must be received at least two terms prior to the term of admission. For more complete

information on the program, write the Department of Mathematics and Statistics at Portland State.

Degree requirements

University master's degree requirements are listed on page 70. Specific departmental requirements are listed below.

Master of Arts or Master of Science in mathematics. Candidates must complete an approved 45-credit program which includes at least 30 credits in mathematics or statistics. These 30 credits must include courses distributed as follows: two 9-credit sequences at the 600 level and either the 3-credit Mth 501 Mathematical Literature and Problems or the 3-credit Stat 501 Statistical Literature and Problems. In addition, the student must pass written examinations.

Master of Science in statistics.

Candidates must complete an approved 45-credit program which includes at least 33 credits in courses with the Stat prefix. These 33 credits must include courses distributed as follows: one 9-credit sequence at the 600 level, two 9-credit sequences at the 500 level, 3 credits of Stat 570, Topics in Statistical Consulting, and 3 credits of Stat 501, Statistical Literature and Problems. In addition, the student must pass written examinations.

Master of Science in Teaching or Master of Arts in Teaching. The Master of Science in Teaching or the Master of Arts in Teaching of mathematics are designed for individuals interested in strengthening their understanding of mathematics to enrich the teaching of mathematics. The program prepares teachers in subjects such as geometry, algebra, analysis/calculus, history of mathematics, probability, statistics, discrete mathematics, and use of technology in the classroom. The program is intended for individuals with a mathematics degree or a strong background in mathematics.

An M.S.T./M.A.T. candidate must complete an approved program of 45 graduate credits and complete an approved mathematics curriculum project. The program may also lead to the Standard Teaching Certificate/License. University requirements for a Standard Teaching Certificate/License are listed on page 225.

Doctor of Philosophy in mathematical sciences. Candidates entering with a bachelor's degree must complete an approved program of 99 credit hours distributed as follows: coursework (63 credits), a doctoral seminar (9 credits), and dissertation research (27 credits). Coursework must include: 45 credits of mathematics and statistics courses, of which at least 10 courses are at the 600 level, and 15 credits of

allied area courses at the 500 and 600 level. Students entering with a master's degree must complete a minimum of 72 credit hours beyond a master's degree distributed as follows: a minimum of 18 credits of approved courses in mathematics and statistics at the 600 level, a minimum of 15 credits in an allied area at the 500 and 600 level, 9 credits of doctoral seminar, and 27 credits of dissertation research. Candidates must pass comprehensive examinations in mathematics and an allied area. Students are also required to demonstrate competency in a foreign language approved by the student's advisory committee.

Doctor of Philosophy in mathematics education. The Department of Mathematics and Statistics offers a Ph.D. in Mathematics Education. The main objective of this program is to develop educators with an understanding of mathematics and its teaching and learning, and with the capabilities for research and professional practice in the field. This program provides a balance between mathematics and mathematics education to help in the development of mathematics educators who may become: (1) Faculty members in mathematics education in mathematics departments or schools of education in universities, four-year colleges, or community colleges; (2) Curriculum specialists in mathematics, supervisors of mathematics at the middle school level or secondary school level, or mathematics specialists in state or local departments of education; (3) Private sector specialists in mathematics education.

Candidates must complete an approved program of 84 credit hours which consists of three major components: coursework, a research practicum experience, and dissertation research. Coursework must include 18 credit hours mathematics education research courses (Mth 690-695); 18 credit hours of other 500-600 level mathematics courses; and 18 hours of graduate coursework in supporting areas outside of mathematics (such as curriculum and instruction, psychology, educational policy, science, computer science, philosophy, sociology, anthropology, etc.). Candidates must pass comprehensive examinations in mathematics and mathematics education. In addition, candidates will be strongly encouraged to demonstrate competency in reading research in mathematics education in at least one language other than English.

Doctor of Philosophy in systems science—mathematics. The Department of Mathematics and Statistics participates in the Systems Science Doctoral Program offering a Ph.D. in systems science-mathematics. Specialized studies in applied and theoretical mathematics, when combined

with core area courses and electives, will partially fulfill the requirements for the Ph.D. in systems science-mathematics. For specific requirements for this degree, contact the Department of Mathematics and Statistics, and for general information related to the Systems Science Ph.D. degree, see page 75.

Courses

Courses with an asterisk () are not offered every year.*

A course can be used as a prerequisite for a subsequent mathematics course only if it has been satisfactorily completed. Satisfactory completion of a course means receiving a C-, P, or above in that course. When courses are required to be taken in sequence each course is regarded as a prerequisite for the next.

Mth 70 Elementary Algebra (4)

This is a basic course covering first-year high school algebra. Credit for enrollment (eligibility) but not toward graduation; satisfies no University or general education requirements. Taught through the School of Extended Studies.

Mth 95 Intermediate Algebra (4)

Topics include problem solving, linear equations, systems of equations, polynomials and factoring techniques, rational expressions, radicals and exponents, quadratic equations. Credit for enrollment (eligibility) but not toward graduation; satisfies no University or general education requirements. Taught through the School of Extended Studies. Recommended prerequisite: Mth 70.

Mth 105 Excursions in Mathematics (4)

Exploration of a variety of modern mathematical topics. Topics may include the mathematics of voting systems, graphs and networks, symmetry in art and nature, population growth, fractals, probability. Intended for students without a strong algebra/calculus background, but with a desire to explore some interesting mathematics. Recommended prerequisite: second-year high school algebra or equivalent.

Mth 111, 112 Introductory College Mathematics I, II (4, 4)

An integrated treatment of topics from algebra and trigonometry. These courses serve as additional preparation for students with insufficient background who desire to take Mth 251, 252, 253. Neither Mth 111 nor 112 can be taken for credit if a grade of C-, P, or above has already been received for a course which requires either of them as a prerequisite. Courses must be taken in sequence. Recommended prerequisite: Mth 111: second year high school algebra or equivalent. Mth 112: Mth 111.

Mth 191, 192, 193 Mathematics Tutoring (3, 3, 3)

Training in one-to-one and small-group tutoring over a wide range of mathematical topics. Mth 191: tutoring in arithmetic and other non-university courses. Mth 192: tutoring in freshman-level mathematics. Mth 193: tutoring in sophomore- junior- and senior-level mathematics.

Required field work consists of providing tutoring service in the community or University. Recommended prerequisite: consent of instructor.

Mth 199 Special Studies (Credit to be arranged.) Mth 211, 212, 213 Foundations Of Elementary Mathematics I, II, III (4, 4, 4)

A constructivist approach to fundamental ideas of mathematics. Courses must be taken in sequence. Prerequisite: second year high school algebra or equivalent.

Mth 241 Calculus for Management and Social Sciences (4)

An introduction to differential and integral calculus, this course is intuitive in approach and emphasizes applications. While intended as a terminal course, the interested student may follow it by the more extensive and rigorous calculus sequence Mth 251, 252, 253, 254. Students may not receive credit for this course if they already have credit for Mth 251. Prerequisite: Mth 111.

Mth 251, 252, 253 Calculus I, II, III (4, 4, 4)

Differential and integral calculus of functions of a single variable, analytic geometry, infinite series, and applications. Courses must be taken in sequence. Recommended: Mth 112.

Mth 254 Calculus IV (4)

An introduction to differential and integral calculus of functions of several variables and applications. Prerequisites: Mth 252, 261.

**Mth 256
Applied Differential Equations I (4)**
Solution techniques in ordinary differential equations; applications. Prerequisites: Mth 252, 261.

Mth 261 Introduction to Linear Algebra (4)

Introduction to rudimentary set theory, the algebra of sets, systems of linear equations, linear transformations, matrix algebra, vector spaces, and determinants. Recommended prerequisite: Mth 112.

Mth 271 Mathematical Computing (4)

Machine representation of the real number field and its consequences. Elements of error analysis. Introduction to the design, analysis, and stability of algorithms. Well/ill-conditioned problems. Programming, graphics, numeric and symbolic computations in MATLAB (a high level programming environment). Examples and applications in mathematics, science, and engineering. Prerequisite: Mth 253, 261.

Mth 301, 302, 303 Elements of Modern Mathematics I, II, III (4, 4, 4)

Topics selected from arithmetic, algebra, geometry, calculus, probability, and statistics. A cultural approach to mathematics in which technical proficiency is not the primary objective. Recommended for liberal arts students. Prerequisite: Mth 111.

Mth 311 Advanced Calculus (4)

Properties of the real numbers, introduction to metric spaces, Euclidean spaces, functions of a real variable, limits, continuity, the extreme and intermediate value theorems, sequences. Prerequisite: Mth 253, 261.

Mth 312, 313**Advanced Multivariate Calculus (4, 4)**

Differential and integral calculus of functions of several variables, the inverse and implicit function theorems, infinite and power series, differential forms, line and surface integrals, Green's, Stokes', and Gauss' theorems. Courses must be taken in sequence. Prerequisite: Mth 311.

Mth 322**Applied Differential Equations II (4)**

Introduction to equations of mathematical physics, boundary value problems, separation of variables, power series techniques, Fourier series, and applications. Prerequisites: Mth 254, 256.

Mth 324**Vector Analysis (4)**

Modern vector methods with applications for students of mathematics, physics, and engineering. Prerequisite: Mth 254.

Mth 338**Modern College Geometry (4)**

Topics in Euclidean and non-Euclidean geometry. Prerequisites: Mth 252, 261.

Mth 343**Applied Linear Algebra (4)**

Topics in matrix algebra, determinants, systems of linear equations, eigenvalues, eigenvectors, and linear transformations. Selected applications from science, engineering, computer science, and business. Prerequisites: Mth 252, 261.

Mth 344**Introduction to Group Theory and Applications (4)**

Groups, homomorphisms, factor groups. Selected applications from geometry, combinatorics, computer science, chemistry. Prerequisites: Mth 252, 261.

Mth 345**Introduction to Ring and Field Theory (4)**

Topics in rings, integral domains, fields, ordered fields, polynomial rings. The development of the real number system. Prerequisite: Mth 344.

Mth 346**Number Theory (4)**

A presentation of the properties of numbers as found in the theory of divisibility, congruence, diophantine equations, continued fractions, and algebraic numbers. Prerequisites: Mth 252, 261.

Mth 356**Discrete Mathematics (4)**

Topics in discrete mathematics, including propositional logic, sets, relations, inverse functions, divisibility, induction, recurrences, inclusion-exclusion, permutations, combinations, graphs, graph coloring, and applications. Prerequisite: Mth 253. Recommended: Mth 261.

Mth 399**Special Studies (Credit to be arranged.)****Mth 401/501****Research (Credit to be arranged.)**

Consent of instructor.

Mth 404/504**Cooperative Education/Internship (Credit to be arranged.)****Mth 405/505****Reading and Conference (Credit to be arranged.)**

Consent of instructor.

Mth 407/507**Seminar (Credit to be arranged.)**

Consent of instructor.

Mth 410/510**Selected Topics (Credit to be arranged.)**

Consent of instructor.

Mth 411/511, 412/512, 413/513**Introduction to Real Analysis I, II, III (3, 3, 3)**

Sequences and series of functions; real-valued functions on topological spaces; the Stone-Weierstrass and Baire category theorems; compact, self-adjoint, and Fredholm operators; Fourier series and integrals; elements of functional analysis. Courses must be taken in sequence. Prerequisite: Mth 312.

Mth 420/520**Introduction to Complexity Theory (3)**

An introduction to theoretical computer science. Includes a study of models of computation, complexity classes, Cook's theorem, polynomial and nonpolynomial classes, discrete problems. Prerequisite: Mth 344.

Mth 421/521, 422/522, 423/523**Theory of Ordinary Differential Equations I, II, III (3, 3, 3)**

Vector fields and phase flows in the plane. Geometric and algebraic properties of linear systems. Existence, uniqueness, and continuity theorems for systems. Additional topics. Courses must be taken in sequence. Prerequisite: Mth 312.

Mth 424/524, 425/525**Elementary Differential Geometry and Tensor Analysis I, II (3, 3)**

Differential geometry of curves and surfaces; elementary Riemannian geometry; tensors and their algebra; elements of tensor analysis; applications from mechanics and field theory. Courses must be taken in sequence. Prerequisite: Either Mth 256 or 421.

Mth 430/530**Topics in Mathematical Modeling (3)**

Basic introduction to mathematical model building starting with prototype, model purpose definition, and model validation. Models will be chosen from life, the physical and social sciences. Applications chosen from differential equations, linear programming, group theory, probability or other fields. Prerequisites: Consent of instructor and either Mth 256 or 421/521. With approval, this course may be repeated for credit.

Mth 431/531, 432/532, 433/533**Topics in Geometry I, II, III (3, 3, 3)**

Topics selected from projective geometry, non-Euclidean geometry, algebraic geometry, convexity, differential geometry, foundations of geometry, combinatorial topology. With departmental approval, this sequence may be repeated for credit. Prerequisite: Mth 311, 338, or 344.

Mth 434/534, 435/535, 436/536**Set Theory and Topology I, II, III (3, 3, 3)**

Cardinal and ordinal numbers. The axiom of choice and equivalent formulations. Introduction to general topology with the notions of interior, closure, topological space, continuity, and homeomorphism. Construction techniques and properties of point-set topology, especially connectedness, compactness, and separation. Additional topics. Courses must be taken in sequence. Prerequisite: Mth 311.

Mth 440/540**Boolean Algebra (4)**

Axiomatic treatment of Boolean algebras, finite Boolean algebras, representation theorems. Introduction to partially ordered sets and lattices. Transfinite induction, Zorn's lemma. Applications to logic and switching circuits. Prerequisite: Mth 344.

Mth 441/541, 442/542, 443/543**Introduction to Abstract Algebra I, II, III (3, 3, 3)**

Groups and rings with homomorphism theorems, vector spaces, modules, algebraic theory of fields and Galois theory, lattices, algebras. Prerequisite: Mth 344. Courses must be taken in sequence.

Mth 444/544, 445/545**Advanced Linear/Multilinear Algebra I, II (3, 3)**

A second course in linear algebra. Products, quotients, and duals of vector spaces. Multilinear maps, tensor products, exterior algebra. Minimal and characteristic polynomials, canonical forms. Finite dimensional spectral theory. With departmental approval, this sequence may be repeated for credit. Courses must be taken in sequence. Prerequisite: Mth 344.

Mth 449/549**Topics in Advanced Number Theory (3)**

A study of advanced topics selected from the areas of algebraic or analytic theory. With departmental approval, this course may be repeated for credit. Prerequisite: Mth 346.

Mth 451/551, 452/552, 453/553**Numerical Calculus I, II, III (3, 3, 3)**

Computer arithmetic. Solution of nonlinear equations. Interpolation. Numerical integration and differentiation. Solution of linear equation systems. Eigenvalue problem, least square, chebyshev, trigonometric and rational function approximation. Numerical solution of differential equations. Prerequisites: knowledge of FORTRAN or PASCAL, Mth 253, 261 for Mth 451/551, Mth 451/551 for Mth 452/552, Mth 322 for Mth 453/553.

Mth 457/557, 458/558**The Mathematical Theory of Games (3,3)**

Introduction to mathematical game theory and game theoretic analysis. Topics include: combinatorial and strategic games, Perfect Competition, Zermelo's Algorithm, Payoffs, cooperative and non-cooperative games, bargaining, mixed strategies, Nash Equilibrium, repeated games and finite automata, common knowledge and incomplete information, the prisoner's dilemma. Selected applications to economics, biology, computer science, and political science. Prerequisite: Mth 261 and/or Stat 243.

Mth 467/567, 468/568**Applied Probability I, II (3, 3)**

Finite probability, Markov chains, queuing theory, renewal theory, optimization under uncertainty. Courses must be taken in sequence. Prerequisite: Mth 254 or Stat 461/561.

Mth 470/570, 471/571, 472/572**Complex Analysis and Boundary Value Problems I, II, III (3, 3, 3)**

Fundamental concepts of complex variables, partial differential equations and boundary value problems using Fourier series. Prerequisites: Mth 254 and either 256 or 421.

Mth 480/580**Systems Analysis: Calculus of Variations (3)**

Basic problems of the calculus of variations. Euler equations. Lagrange conditions. Lagrange multipliers. Lagrange equations. Hamilton's equations. Application to mechanical and electrical systems. Prerequisite: Mth 256 or 422/522.

Mth 481/581**Topics in Probability for Mathematics Teachers (3, 2-3)**

Introduction to probability as a modeling technique in mathematics and methods of teaching probability. Use of probability in decision making and inference. Simulation of experiments. Methods of enumeration. Laws of probability. Special probability distributions. Computer-assisted analysis. With departmental approval may be repeated for credit. Prerequisite: at least two upper-division courses approved for major credit.

Mth 482/582**Topics in Statistics for Mathematics Teachers (3, 2-3)**

Introduction to methods of statistical analysis and methods for teaching statistics. Descriptive statistics, organization of data, sampling techniques, sampling distributions, methods of statistical inference, estimation, hypothesis testing, regression, and correlation. Computer-assisted analysis. With departmental approval may be repeated for credit. Prerequisite: at least two upper-division courses approved for major credit.

Mth 483/583**Topics in Geometry for Mathematics Teachers (3, 2-3)**

Selected topics in geometry for mathematics teachers. With departmental approval may be repeated for credit. Prerequisite: at least two upper-division courses approved for major credit.

Mth 484/584**Topics in Algebra for Mathematics Teachers (3, 2-3)**

Selected topics in algebra for mathematics teachers. With departmental approval may be repeated for credit. Prerequisite: at least two upper-division courses approved for major credit.

Mth 485/585**Topics in Analysis for Mathematics Teachers (3, 2-3)**

Selected topics in analysis for mathematics teachers. With departmental approval may be repeated for credit. Prerequisite: at least two upper-division courses approved for major credit.

Mth 486/586**Topics in The History of Mathematics (3, 2-3)**

Selected topics in the historical development of mathematics. With departmental approval, this course may be repeated for credit. Prerequisite: at least two upper-division courses approved for major credit.

Mth 487/587**Topics in Combinatorial Analysis (3, 2-3)**

Selected topics from: permutations and combinations, partitions, generating functions, inclusion and exclusion principles, recurrence relations, Polya's theory of counting, elementary theory of graphs and trees, block designs. With departmental approval may be repeated for credit. Prerequisite: at least two upper-division courses approved for major credit.

Mth 488/588**Topics in Technology for Mathematics Teachers (3, 1-3)**

Hands-on experience in the study of the role of computer software and calculators in the teaching and learning of mathematics. With departmental approval may be repeated for credit. Prerequisite: at least two upper-division courses approved for major credit.

Mth 490/590**Computing in Mathematics for Middle School Teachers (3)**

A study of the role of computing in mathematics with emphasis on the use of modern technology. Not approved for major credit. Available for graduate credit toward the graduate certificate program in middle school mathematics. Prerequisites: Mth 111, 212.

Mth 491/591**Experimental Probability and Statistics for Middle School Teachers (3)**

A study of probability and statistics through laboratory experiments, simulations, and applications. Not approved for major credit. Available for graduate credit toward the graduate certificate program in middle school mathematics. Prerequisites: Mth 111, 212.

Mth 492/592**Problem Solving for Middle School Teachers (3)**

Examination and application of problem-solving techniques and strategies. Problems are drawn from various areas of mathematics. Not approved for major credit. Available for graduate credit toward the graduate certificate program in middle school mathematics. Prerequisites: Mth 111, 212.

Mth 493/593**Geometry for Middle School Teachers (3)**

Selected topics from informal geometry, both two- and three-dimensional. Not approved for major credit. Available for graduate credit toward the graduate certificate program in middle school mathematics. Prerequisites: Mth 111, 212.

Mth 494/594**Arithmetic and Algebraic Structures for Middle School Teachers (3)**

The study of the real number system and its subsystems will lead to the introduction of more general algebraic structures and their applications. Not approved for major credit. Available for graduate credit toward the graduate certificate program in middle school mathematics. Prerequisites: Mth 111, 212.

Mth 495/595**Historical Topics in Mathematics for Middle School Teachers (3)**

A survey of the historical development of topics in mathematics from ancient to modern times, with special emphasis on topics in arithmetic, algebra and informal geometry. Not approved for major credit. Available for graduate credit toward the graduate certificate program in middle school mathematics. Prerequisites: Mth 493/593, 494/594.

Mth 496/596**Concepts of Calculus for Middle School Teachers (3)**

An introduction to the limit concept and its role in defining the derivative, the integral and infinite series. Applications to middle school mathematics. Not approved for major credit.

Available for graduate credit toward the graduate certificate program in middle school mathematics. Prerequisites: at least two middle school courses.

Mth 503**Thesis (Credit to be arranged.)****Mth 601****Research (Credit to be arranged.)****Mth 603****Thesis (Credit to be arranged.)****Mth 604****Cooperative Education/Internship (Credit to be arranged.)****Mth 605****Reading and Conference (Credit to be arranged.)****Mth 607****Seminar (Credit to be arranged.)****Mth 610****Selected Topics (Credit to be arranged.)****Mth 611, 612, 613****Theory of Functions of a Real Variable I, II, III (3, 3, 3)**

Lebesgue measure and outer measure, measurable functions and the Lebesgue integral, convergence theorems, product measures, and Fubini's theorem. L_p spaces, derivatives, derivative, finite variation and absolutely continuous functions. Courses must be taken in sequence. Recommended prerequisite: Mth 412/512.

Mth 614, 615, 616**Modern Analysis I, II, III (3, 3, 3)**

Topics from nonlinear analysis, harmonic analysis, analytic functions, ordered vector spaces, analysis on Lie groups, and operator theory. Recommended prerequisite: Mth 412/512.

Mth 617, 618, 619**Functional Analysis I, II, III (3, 3, 3)**

Hilbert and Banach spaces, the Hahn-Banach, open mapping, and closed graph theorems. Compact, self-adjoint, normal, and Fredholm operators. Locally convex spaces, weak topologies, duality. Banach- and C^* -algebras, spectral theory. Courses must be taken in sequence. Recommended prerequisite: Mth 412/512.

Mth 621, 622, 623**Advanced Differential Equations I, II, III (3, 3, 3)**

Advanced theory of dynamical systems and partial differential equations including the basics of partial differential equations, boundary value problems for elliptic equations, the Cauchy problem, and parabolic equations. Topics selected from Hamiltonian systems, waves and shocks, variational methods, control theory. Recommended prerequisite: Mth 423/523 or 472/572.

Mth 624, 625, 626**Advanced Differential Geometry I, II, III (3, 3, 3)**

Topics selected from differentiable manifolds, differential forms, DeRham cohomology, Lie groups, fibre bundles, the Riemannian metric, affine and Riemannian connections, parallel translations, holonomy, geodesics, curvature, isometric embeddings and hypersurfaces, the Second Fundamental Form, complete Riemannian manifolds and the Hopf-Rinow theorem, spaces of constant curvature, variations of arc length, and the Morse Index theorem. Recommended prerequisite: Mth 425/525.

Mth 634, 635, 636**Algebraic Topology I, II, III (3, 3, 3)**

Topics from singular and simplicial homology and cohomology theories, fundamental group and covering spaces, CW complexes and elements of homotopy theory, algebraic theory of manifolds, introduction to differential topology and vector bundles, applications. Courses must be taken in sequence. Recommended prerequisites: Mth 435/535 and 444/544.

Mth 637, 638, 639**Geometric Topology I, II, III (3, 3, 3)**

Topics from geometric and piecewise linear topology, knots and 3-manifolds and gauge theories, geometric structures and geometrization of manifolds, applications to differential topology, vector bundles and to mathematical physics. Recommended prerequisite: Mth 436/536.

Mth 641, 642, 643**Modern Algebra I, II, III (3, 3, 3)**

Topics from groups, semigroups, rings, fields, algebras, and homological algebra. Recommended prerequisite: Mth 443/543 or both 442/542 and 445/545.

Mth 651, 652, 653**Advanced Numerical Analysis I, II, III (3, 3, 3)**

An advanced study of numerical methods with emphasis on theory, economy of computation, and the solution of pathological problems. Topics will typically be chosen from: evaluation of functions, roots of equations, quadrature, ordinary and partial differential equations, integral equations, eigenvalues, construction of approximating functions, orthonormalizing codes, and treatment of singularities. Courses must be taken in sequence. Recommended prerequisite: Mth 453/553.

Mth 667, 668, 669**Stochastic Processes and Probability Theory I, II, III (3, 3, 3)**

Sets, spaces, and measures. Probability distributions. Random variables. Dependence. Limit theorems. Birth and death processes and Markov processes. Mathematical statistics, hypothesis testing, and sequential analysis. Selected applications. Courses must be taken in sequence. Recommended prerequisite: Mth 411/511, Stat 463/563.

Mth 690**Introduction to Research in Mathematics Education (3)**

Topics in the history of mathematics education including an examination of the current research trends in mathematics education.

Mth 691**Curriculum in Mathematics Education (3)**

An analysis of curriculum development and assessment efforts in mathematics education both past and present.

Mth 692**Research Methodology and Design (3)**

An examination of quantitative and qualitative research methodologies and their applications to the design of research in mathematics education.

Mth 693**Research on the Learning of Mathematics (3)**

An analysis of the mathematics education research on the learning of mathematics, including topics from K-16 mathematics.

Mth 694**Research on the Teaching of Mathematics (3)**

An analysis of the research on the teaching of mathematics, including issues from levels K-16.

Mth 695**Topics in Research in Mathematics Education (3)**

A special topics seminar devoted to exploring particular issues in more depth.

The following in-service courses have limited application toward advanced degrees.

Mth 801**Research (Credit to be arranged.)****Mth 802****Independent Study (Credit to be arranged.)****Mth 804****Cooperative Education/Internship (Credit to be arranged.)****Mth 805****Reading and Conference (Credit to be arranged.)****Mth 806****Special Problems/Projects (Credit to be arranged.)****Mth 807****Seminar (Credit to be arranged.)****Mth 808****Workshop (Credit to be arranged.)****Mth 809****Practicum (Credit to be arranged.)****Mth 810****Selected Topics (Credit to be arranged.)****STATISTICS****Stat 199****Special Studies (Credit to be arranged.)****Stat 243, 244****Introduction to Probability and Statistics I, II (4, 4)**

A basic course in statistical analysis including presentation of data probability, probability distributions, sampling distributions, estimation, tests of significance, experimental design and analysis of variance, regression and correlation, nonparametric statistics, selected topics, applications, and use of statistical computer packages. A broad nontechnical survey designed primarily for non-math students who need to utilize the subject in their own fields. Not approved for major credit. Courses must be taken in sequence. Prerequisite: second year high school algebra or equivalent, or satisfactory score on the placement exam.

Stat 366**Introduction to Experimental Design (4)**

Nonparametric statistics, multiple regression, topics in experimental design analysis of variance, factorial designs, analysis of covariance, other designs. Prerequisite: Stat 244.

Stat 399**Special Studies (Credit to be arranged.)****Stat 401/501****Research (Credit to be arranged.)**

Consent of instructor.

Stat 404/504**Cooperative Education/Internship (Credit to be arranged.)****Stat 405/505****Reading and Conference (Credit to be arranged.)**

Consent of instructor.

Stat 407/507**Seminar (Credit to be arranged.)**

Consent of instructor.

Stat 410/510**Selected Topics (Credit to be arranged.)**

Consent of instructor.

Stat 451/551, 452/552**Applied Statistics for Engineers and Scientists I, II (4, 3)**

An introduction to techniques of applied probability, statistics, and data analysis. Stat 451/551: sample spaces, probability and counting measures, discrete and continuous probability models, sampling theory, and computer applications. Stat 452/552: point and interval estimation, hypothesis testing, regression, correlation, experimental design, analysis of variance, multivariable experiments, nonparametrics, statistical quality control, and computer applications. Prerequisite: Mth 253.

Stat 461/561, 462/562, 463/563**Introduction to Mathematical Statistics I, II, III (3, 3, 3)**

Theory of probability, distributions of random variables, central limit theorem, sampling distributions, point and interval estimation, tests of hypotheses, analysis of variance. Courses must be taken in sequence. Prerequisite: Mth 256.

Stat 464/564**Applied Regression Analysis (3)**

Basic concepts of regression analysis, matrix approach to linear regression selecting the "best" regression equation, and multiple regression. Computational algorithms and computer software regression packages. Applications in science, engineering, and business. Prerequisites: Mth 343 and either Stat 451/551 or 461/561.

Stat 465/565, 466/566**Experimental Design: Theory and Methods (3, 3)**

A theoretical and applied treatment of experimental design; analysis of variance, fixed effect models, random effects models, checking model adequacy; block designs, Latin squares, related designs; incomplete designs; factorial designs, confounding two-level designs, split-plot designs; fractional factorial designs; nested designs; relation to regression analysis; analysis of covariance. All sections will illustrate real world applications with computer usage. Prerequisite: Stat 464/564.

Stat 470/570**Statistical Consulting (1)**

Introduction to techniques and methods of statistical consulting. Faculty supervised consulting sessions with clients on appropriate projects brought to the Statistics Consulting Laboratory. Data and/or statistical problems, from within and outside the University, are provided by clients and interdisciplinary guest lecturers. Introduction to and proficiency with various statistical computing packages as data analytic tools. A community-based learning course.

Stat 503**Thesis (Credit to be arranged.)****Stat 543****Survey of Statistical Methods (4)**

An introductory, discipline-neutral course in statistical analysis to prepare graduate students for research methods courses in other departments. Topics include descriptive statistics,

confidence intervals, hypothesis tests, regression and correlation, analysis of variance, chi-squared tests, and use of statistical software.

Stat 571

Applied Multivariate Statistical Analysis (3)

Introduction to techniques and methods of multivariate statistical analysis. Deals with vector-valued data generated on individual experimental units. Applies the methods of vector analysis and matrix algebra to statistical problems of estimation and hypothesis testing, based primarily on the multivariate normal distribution. Computing to be an integral part of the course. Calculations will be done using a software package such as SAS or SPSS. Recommended prerequisites: Stat 244, Mth 254 and 343.

Stat 573

Computer Intensive Methods in Statistics (3)

Resampling methods in statistics using empirical data, programming with statistical software, review materials (sampling distributions, hypothesis testing, confidence interval construction, and design of experiments), resampling version of review materials, and applications. Recommended prerequisites: Stat 452/552 or 466/566.

Stat 576

Sampling Theory and Methods (3)

Introduction to the theory and methodology of random sampling. Includes stratified, cluster, systematic, and multi-stage sampling.

Applications include sampling design and analysis, as well as sample weighting and sampling with unequal probabilities. Recommended prerequisite: Stat 451/551

Stat 577

Categorical Data Analysis (4)

Topics include cross-tabulation statistics for matched samples, and methods to assess confounding and interaction via stratified tables. Students explore logistic regression in some detail, and relate results back to those found with stratified analyses. Topics for logistic regression will include: parameter interpretation, statistical adjustment, variable selection techniques, and model fit assessment. Statistical software is used. Recommended prerequisite: Stat 452/552.

Stat 578

Survival Analysis (3)

Time-to-event data subject to random and/or deliberate censoring. Specialized models and procedures that accommodate censoring are presented. Parametric models and methods, including accelerated failure time models, the Kaplan-Meier estimate of survival, Cox proportionate hazards model, the extended Cox model, and frailty models. Software package such as S-PLUS is used. Recommended prerequisite: Stat 452/552.

Stat 601

Research (Credit to be arranged.)

Stat 603

Dissertation (Credit to be arranged.)

Stat 604

Cooperative Education/Internship (Credit to be arranged.)

Stat 605

Reading and Conference (Credit to be arranged.)

Stat 607

Seminar (Credit to be arranged.)

Stat 610

Selected Topics (Credit to be arranged.)

Stat 661, 662, 663

Advanced Mathematical Statistics I, II, III (3, 3, 3)

Theory of estimation; tests of statistical hypotheses. Single and multi-parameter cases. Robustness. Classical notions, including lower bound theory, sufficiency, and maximum likelihood estimation. The Neyman-Pearson construction, likelihood ratio tests, robust analogues. Recommended prerequisites: Mth 511, Stat 563.

Stat 664, 665, 666

Theory of Linear Models I, II, III (3, 3, 3)

Multivariate normal distribution; moments and characteristic functions; noncentral Chi-square and noncentral F distributions; distribution of quadratic forms; estimation and distribution of estimators; principles of maximum likelihood and least squares; confidence regions and tests of hypotheses; regression models; Wishart distribution; Hotelling's T² statistic. Courses must be taken in sequence. Recommended prerequisite: Stat 463/563.

Philosophy

471 Neuberger Hall
503-725-3524
www.philosophy.pdx.edu

B.A., B.S.
Minor

Undergraduate program

The objective of the philosophy program is to help the student develop an ability to grasp and critically analyze concepts and assumptions made about reality, humanity, knowledge, truth, value, and society, and to evaluate claims about them.

More specifically, philosophy is concerned with such questions as these: How do value judgments differ from other judgments? Are values relative? If so, relative to what? Is beauty in the eye of the beholder? Is there such a thing as knowledge of right and wrong, good and bad, ugly and beautiful? If so, how do we get it? What is it for a situation to be unjust?

What is it to have a right to something or to do something?

What makes one society better than another? Is there such a thing as one person being a better human being than another? If so, in what does this consist? Is happiness the ultimate value? If not, what other values are there?

What is truth? Is it a human creation or is it there to be discovered? Are there really such things as electrons, or is talk about electrons merely a convenient device for making predictions? What is explanation in science?

What is the will? Do we have freedom of will? What is the relation between a person's body and mind?

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. In addition to meeting the general University degree requirements, the philosophy major must take a minimum of 56 credits in philosophy courses. Specific requirements are as follows:

	Credits
Phi 201 Introduction to Philosophy.....	4
Phi 300 Philosophical Methods and Concepts	4
Phi 301, 302 History of Philosophy	8
Phi 308 Elementary Ethics	4
Phi 324 Introduction to Formal Logic.....	4
Two courses taken from the following (historical figures):	8
Phi 414, 415, 416, 417, 419, 420, 425, 451	
Four courses taken from the following (thematic courses):	16
Phi 423, 424, 432, 433, 445, 446, 470, 471, 474	
Philosophy electives	8
Total	56

A maximum of 8 credits of philosophy taken under the undifferentiated grading option (pass/no pass) are acceptable toward fulfilling department major requirements.

Philosophy honors option. The Philosophy Department's honors option is designed to challenge and enrich the educational experience of superior philosophy majors and, with a successful completion, recognize and honor their achievements. The requirements to qualify for departmental honors include: at least junior standing; completion of at least 20 credits of philosophy (including at least one 400-level course); minimum GPA of 3.50 in philosophy courses; writing sample. In addition to the completion of at least 60 credits in philosophy and a minimum GPA of 3.50 in philosophy courses at graduation, there are two options for receiving departmental honors: completion of Honors Seminar (Phl 485) and Honors Thesis (Phl 403) with receipt of A- or above in both courses or completion of at least four 400-level courses of the philosophy curriculum with honors requirements in each and an earned average of A- or above. For further details on requirements, expectations, and procedures, please contact department office or honors option coordinator.

Requirements for minor. To earn a minor in philosophy a student must complete 28 credits (8 credits of which must be taken in residence at PSU), to include the following:

	Credits
Phl 201 Introduction to Philosophy.....	4
Phl 301, 302 History of Philosophy.....	8
Phl 308 Elementary Ethics.....	4
Philosophy electives (to include a minimum of 8 credits in upper-division courses).....	12
Total	28

A maximum of 4 credits of philosophy taken under the undifferentiated grading option (pass/no pass) are acceptable toward fulfilling department minor requirements.

Courses

Courses with an asterisk () are not offered every year.*

Note: There are no sequences among the lower division courses. Any of Phl 201-210 make a good starting course in philosophy.

Phl 199 Special Studies (Credit to be arranged.)

**Phl 201
Introduction to Philosophy (4)**
General introduction to philosophy. While different instructors will use different materials—typically classical texts—attention will be given to what makes a question a philosophical question and the nature and methods of philosophical inquiry.

**Phl 210
Philosophy of Religion (4)**
Examination of philosophical questions involved in the study of religion, e.g., the meaning of "God," or "gods;" the traditional arguments for the existence of a god; the meaning of faith and the question of its connection to rea-

son; the problem of evil (of reconciling a god's alleged perfection with the existence of evil). *Note:* this is not a class in comparative religion or the history of religion.

***Phl 211
Philosophy of Art (4)**
Philosophical issues concerning the creation, interpretation, and consumption of art. Includes an overview of the major philosophical theories about the nature of art, an examination of the relationship between art and ethics, art and psychology, art and pornography, and relativism of aesthetic value judgments.

**Phl 212
Philosophy of Literature (4)**
An introduction to traditional philosophical issues as they appear in literature, especially in fiction. The specific philosophical problems and the literary works will vary from term to term and from instructor to instructor.

**Phl 300
Philosophical Methods and Concepts (4)**
A survey of the major strategies of proof and disproof central to philosophical reasoning, and of the fundamental concepts and distinctions employed in current philosophical discourse. Aims at providing students who have a serious interest in thinking philosophically with the conceptual tools found to be useful for this purpose. Not recommended as a first course in philosophy.

**Phl 301, 302
History of Philosophy (4, 4)**
Study of Western philosophy during the ancient period (classical Greek through Hellenistic times) and the modern period (17th century to Kant).

**Phl 303
Critical Thinking (4)**
Designed to improve reasoning and skills of critical assessment of information. Instruction focuses on practical methods that are applied to case studies from public media such as editorials, essays, propaganda, advertisements, and newspaper reports of scientific studies. Recommended prerequisite: junior status or relevant sophomore inquiry.

**Phl 306
Science and Pseudoscience (4)**
An examination of basic issues in philosophy of science through an analysis of creation science, faith healing, UFO abduction stories, and other pseudosciences. Some of the questions addressed: What distinguishes science from pseudoscience? How are theories tested? When is evidence reliable? Must we invoke the supernatural to explain certain aspects of reality?

**Phl 308
Elementary Ethics (4)**
General introduction to ethical theory. Attention will be given to such questions as whether there are objective moral distinctions, what makes right acts right and wrong acts wrong, and how we know (if we do) that actions are right or wrong. Among the theories likely to be considered are relativism, egoism, utilitarianism, and Kantianism.

**Phl 309
Business Ethics (4)**
Study of the ethical aspects of practices and organizational structures in the business world.

Course begins with a review of some traditional theories of ethics. The bulk of the course is devoted to specific contemporary topics, for example: the moral status of corporations; the concept of work place rights; responsibility in advertising; environmental constraints on business; affirmative action in hiring; the social roles of profit and private property; role of work in the life of the individual.

**Phl 310
Environmental Ethics (4)**
Critical study of issues raised by the attempt to formulate an adequate environmental ethic. Some of these issues deal with how our treatment of the environment affects other human beings, i.e., future generations. Others have to do with how non-human beings are to be treated. Do animals have rights? Do species have rights? Do our proper moral concerns extend to such things as trees, rivers, and possibly the planet itself? A number of current problems will be considered, such as population control, limits to growth, global warming, and endangered species.

**Phl 311
The Morality of Punishment (4)**
The focus is on the nature and proper aims of punishment; moral considerations that bear on the justice and wisdom of punishment. Consideration will be given to the main theories of punishment: retributionism, utilitarianism, paternalism, and the view that punishment should be replaced by therapy.

***Phl 312
Feminist Philosophy (4)**
Critically examines traditional schools of philosophical thinking from a feminist perspective. Recommended prerequisite: one philosophy course other than Phl 306, 324.

**Phl 313
Life and Death Issues (4)**
Cluster course consisting of philosophical aspects of moral problems dealing with life and death issues. Such issues may include abortion, euthanasia, the death penalty, starvation, and nuclear war.

**Phl 314
Computer Ethics (4)**
Examines the moral principles and judgments relevant for appraising key tools of computer ethics. Topics include: ethical aspects of new information technologies; are technologies value-laden; potential abuses and their social consequences; freedom, privacy, and control; security, reliability, and professional responsibilities—risks, control, and regulations; piracy and ownership; ethics of hacking; ethics of virtual environment; and international aspects of new technologies.

**Phl 315
Existentialism (4)**
Introduction to a number of philosophers and literary figures gathered together under the name "existentialism." Authors include Dostoyevsky, Kierkegaard, Nietzsche, Rilke, Kafka, Ortega y Gasset, Jaspers, Heidegger, Sartre, and Camus. Topics include consciousness, (in)authenticity, alienation, death, anxiety, freedom, time, nihilism, historical meaning, and religion. Recommended prerequisite: One philosophy course.

Phl 316
Social and Political Philosophy (4)

The main philosophical theories of the nature and principles of a just society. Social and political order, freedom, justice, and happiness are declared to be the principal ends of any society. Philosophical theories describe, explore, explain, and frequently attempt to justify specific social or political arrangements in order to attain these goals.

Phl 321
Practical Epistemology (4)

Considers criteria for knowledge-claims based on different sources, such as: memory, perception, eyewitness testimony, expert testimony, and medical and scientific experts. Do the criteria for reasonable belief differ so fundamentally from one object-domain to another that we cannot expect a single formal definition of "knowledge"?

Phl 324
Introduction to Formal Logic I (4)

A course in basic formal logic. Major topics include the method of deduction for showing propositional arguments valid and the method of counter-example for showing such arguments invalid. Truth table methods, tests for consistency, and syllogistic arguments are optional topics.

***Phl 325**
Introduction to Formal Logic II, Predicate Logic (4)

Continuation of Phl 324 Introduction to Formal Logic. Primary emphasis will be on formal methods for dealing with arguments involving the terms "all" and "some." Major topics include the method of deduction for showing predicate logic arguments valid, and the method of counter-example for showing such arguments invalid. Recommended prerequisite: Phl 324.

Phl 327
Introduction to Quantitative Literacy (4)

The goal is to learn to think intelligently and critically about important uses of quantitative data by means of discussion of the following topics: samples, measures, scales, relationships, risks, predictions, graphs, averages, percentages, distributions, random effects, and estimates. Intended for students who do not normally take classes that involve quantitative matters; its mathematical content is kept at an absolute minimum.

***Phl 332**
Intentionality, Phenomenology, and Existentialism (4)

Examination of the Kantian roots of what becomes known as "intentionality" (i.e., that our conscious acts are directed toward objects, intending them). Various theories of intentionality will be read and discussed (e.g., Husserl, Heidegger, Frege, and Searle). There will be limited discussion of the alleged ties between intentionality and existentialism. Recommended prerequisite: 8 credits in philosophy.

Phl 399
Special Studies (Credit to be arranged.)

Phl 401
Research (Credit to be arranged.)

Consent of instructor.

Phl 403
Honors Thesis (Credit to be arranged.)

Consent of instructor.

Phl 404/504
Cooperative Education/Internship (Credit to be arranged.)

Phl 405/505
Reading and Conference (Credit to be arranged.)

Consent of instructor.

Phl 407/507
Seminar (Credit to be arranged.)

Consent of instructor.

Phl 410/510
Selected Topics (Credit to be arranged.)

***Phl 414/514**
Plato (4)

Study of selected dialogues of Plato with attention to such topics as his theory of forms, moral philosophy, political philosophy, and to the individual topics of the dialogues, as, for example, knowledge, being, virtue, piety, love, friendship, the state, the nature of philosophy. Recommended prerequisite: 8 credits in philosophy.

***Phl 415/515**
Aristotle (4)

Study of some of the works of Aristotle, such as his *Physics*, *Metaphysics*, *Ethics*, *Politics*, parts of the *Organon Rhetoric*. Among topics for attention are substance, essence, categories, cause, the good man, practical reason. Recommended prerequisite: 8 credits in philosophy.

***Phl 416/516**
The Rationalists: Descartes, Leibniz, Spinoza (4)

Study, with comparisons, of selected works of these philosophers who maintained that knowledge comes primarily from reason. Likely readings: for Descartes, *Meditations*, or *Rules*, or *Discourse on Method*; for Spinoza, *Ethics*; for Leibniz, a selection from among his many collected works and fragments. Offered approximately every second year. Recommended prerequisite: 8 credits in philosophy.

***Phl 417/517**
The Empiricists (4)

Study of the British philosophers, Locke, Berkeley and Hume, who hold that all of the ingredients of thought enter the mind by way of experience and that only what has a definite relation to experience can be thought. Among the particular topics considered will be material substance, spirit, abstract ideas, causation, induction, and skepticism. Recommended prerequisite: 8 credits in philosophy.

***Phl 419/519**
Kant (4)

Study of Kant's Philosophy primarily as represented in the *Critiques of Pure Reason*, *Practical Reason*, *Judgment*. Readings from some of these or related works. Possible topics for consideration: necessary connection, the analytic-synthetic distinction, conceptions of science and metaphysics, relation between metaphysics and morality. Recommended prerequisite: 8 credits in philosophy.

***Phl 420/520**
Wittgenstein (4)

Consideration of some of the major works of Wittgenstein with emphasis on the later work, especially the *Philosophical Investigations*. Attention will be given to Wittgenstein's contributions to philosophical method, as well as to his treatment of issues concerning language,

meaning, intention, understanding, necessity, and the nature of human persons as language users. Recommended prerequisite: 12 credits in philosophy.

Phl 421/521
Nineteenth Century Philosophy (4)

Study of Western philosophy from Kant to the Twentieth century. Recommended prerequisite: 8 credits in philosophy.

***Phl 422**
American Philosophy (4)

Surveys important perspectives, ideas, and theories in the writings of major American philosophers. Focuses on four main topics: the pragmatic philosophy of John Dewey; pragmatism more generally, as developed in the work of Charles Peirce, William James, and George Herbert Mead; classical American philosophy more generally still, as articulated in the writings of Josiah Royce and George Santayana (in addition to Peirce, James, Dewey, and Mead); and the larger intellectual and cultural context of this philosophy, as found in both earlier writers, (e.g., puritans, American enlightenment figures, and transcendentalists) and later, contemporary authors rooted in the pragmatic tradition.

***Phl 423/523**
Metaphysics (4)

Philosophical examination of traditional metaphysical issues (such as relation of body and mind, free will and determinism) and of the more influential ontologies (idealism, materialism, dualism). Introduction also to contemporary controversies over the feasibility of metaphysics as a rationale discipline (logical positivism and its critics). Recommended prerequisite: 8 credits in philosophy.

***Phl 424/524**
Epistemology (4)

Philosophical examination of some of the main issues in the theory of knowledge (such as our knowledge of the external world, of the minds of others, of logical and mathematical truths, etc.). Recommended prerequisite: 8 credits in philosophy.

Phl 425/525
Analytic Philosophy (4)

Examination of the analytic philosophical tradition from Frege and Russell through early Wittgenstein and the Positivists to the present. Recommended prerequisites: 8 credits in philosophy and upper-division standing.

***Phl 432/532**
Philosophy of Mind (4)

A study of the nature of mental states. Main topics are dualism and various forms of materialism, behaviorism, mind-body identity theories, and functionalism; and the nature and content of propositional attitudes (e.g., belief, desire, meaning). Recommended prerequisite: 8 credits in philosophy.

***Phl 433/533**
Philosophy of Language (4)

A study of the nature of language, and of problems of meaning, reference, and truth. Recommended prerequisite: 8 credits in philosophy.

***Phl 445/545**
Advanced Ethics (4)

A course in moral epistemology or "meta-ethics" dealing with such matters as the distinction and connections between fact and value,

“is” and “ought” description and evaluation. Recommended prerequisite: 8 credits in philosophy

Phl 446/546

Topics in Ethics (4)

Considers an array of important issues in contemporary moral philosophy, including (but not limited to) the relation between applied and theoretical ethics, the foundations of moral responsibility and blaming, the role of virtues in the moral life, and the role of outcomes in moral evaluation. Topics vary per course which will allow students to take course more than once, with departmental approval, to apply toward major requirements. Recommended prerequisite: Phl 308 or 445, or consent of instructor.

Phl 450

Ethics and International Justice (4)

The aim of this course is to examine moral principles and judgments relevant for appraising the key tools of foreign policy. Included are issues of military, humanitarian, and covert intervention, economic sanctions, development assistance, human rights, democracy, and transitional justice. Recommended prerequisite: 8 credit hours in philosophy.

Phl 455/555

Morality and Health Care (4)

Emphasis on philosophical examination of the issues in health care. An introductory investigation into selected issues, for example, but not

limited to: euthanasia, abortion, allocation of transplantable organs, rationing health care, treatment of impaired newborns. Recommended prerequisite: 8 credits in philosophy

***Phl 470/570**

Philosophy of Science (4)

Focus on the history and philosophy of the scientific method. Topics include an overview of the major models of the scientific method (inductivism, falsificationism, Kuhnian paradigms, etc.) and issues pertaining to the accuracy of these models and their rationality such as theory-ladenness of observation, testing-holism, and the incommensurability of theory change. Recommended prerequisites: 8 credits in philosophy and upper-division standing.

Phl 471/571

Topics in Philosophy of Science (4)

An in-depth analysis of some specific metaphysical issue pertaining to scientific epistemology such as (but not limited to) explanation, causation, realism, geometry, and relativism. Topics vary per course which will allow students to take course more than once, with departmental approval, to apply toward major requirements. Recommended prerequisites: 8 credits in philosophy and upper-division standing.

***Phl 474/574**

Philosophy of Logic (4)

Topics: validity, sentence-proposition, connectives, quantifiers, truth, paradoxes, logical necessity and possibility. Optional topics: meta-

logic, the construction of formal systems of logic and formal proofs of certain of their properties, e.g., consistency and completeness. Recommended prerequisite: Phl 325.

Phl 481/581, 482/582, 483/583
Biomedical Ethics (4, 4, 4)

A three-term sequence that provides a practical bioethics education in clinical health care, biomedical and behavioral research, and public policy. Phl 481/581: introduction to the concepts, methods, and literature of health care and biomedical research ethics, designed to familiarize participants with the basic definitions and arguments in the major topics of clinical and research ethics. Phl 482/582 and Phl 483/583: concepts and skills developed in 481/581 will be intensively examined; students take responsibility for several aspects of teaching. Courses must be taken in sequence. Recommended prerequisite: Phl 481/581: an acquaintance with health care services is recommended.

***Phl 485**

Honors Seminar (4)

Selected topics within areas of the instructor's research. Both students and teacher will be expected to produce substantial written material on the topic, to be shared and critiqued. Recommended particularly for students considering graduate work in philosophy. Recommended prerequisites: 24 credits in philosophy with a GPA in philosophy courses of at least 3.5.

Physics

262 Science Building II
503-725-3812
www.physics.pdx.edu/

B.A., B.S.

Minor

Secondary Education Program

M.A., M.S.

Ph.D.—Environmental Sciences and

Resources: Physics

Undergraduate programs

Physics is the branch of knowledge that attempts to explain all of the phenomena we observe or infer on earth and in the universe. Its study has made possible a modern understanding of the origin of the universe as well as the behavior of biological materials and chemical processes. Scientists trained in this field can engage in such diverse areas as solid state devices, particle physics, energy and the environment, biotechnology, and space travel.

The study of physics does not involve the following of a specific recipe or set of rules; rather it entails developing an attitude or way of looking at phenomena and asking questions. Physicists seek to understand how the physical universe works, no matter what the scale of observation—from quarks to quasars, from the time it takes the proton to spin, to the age of the cosmos. The answers to these questions are summarized into statements called laws. We live in the age of physical law. Awareness of the beauty, harmony, and interplay of the laws of physics greatly enhances our view and appreciation of our environment.

As an undergraduate, you will take a group of core courses that will give you a general background in the subject. You will study force and motion, heat, optics, electricity, magnetism, atomic and nuclear physics, quantum mechanics, and the physical properties of materials, learning both the theoretical and the experimental aspects.

Physicists are employed by almost all industries, particularly by the technical

industries and by government laboratories. Roughly half of all students with a bachelor's degree in physics go on to graduate work. In addition to a traditional graduate curriculum in physics or astronomy, they can enter programs in optics, applied physics, engineering physics, and education. Biophysics, material science, atmospheric physics, environmental science, medical physics, and finance are particularly popular fields, now. Environmental programs, electrical engineering, nuclear engineering, and computer science are common graduate school tracks. Medicine and law are also fields that welcome students with physics degrees. Many physicists are entrepreneurs who start their own companies.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. It is important that students planning to major in physics contact the Department of Physics prior to the start of their work in order that a coherent program can be planned with their assigned adviser.

Students planning to transfer to PSU from community colleges or other universities are strongly advised to contact the Department of Physics well ahead of their proposed date of transfer so that a smooth transition, which avoids course duplication and untimely delays, can be accomplished. Students need to choose between the standard option and the environmental physics option.

In addition to meeting the general University degree requirements, the student must meet the following minimal departmental course requirements:

	Credits
Ph 201, 202, 203 General Physics, Ph 211, 212, 213, or Ph 221, 222, 223 General Physics (with Calculus).....	9-12
Ph 214, 215, 216 Lab for Ph 201, 202, 203 or Ph 211, 212, 213 or Ph 221, 222, 223.....	3
Ph 311, 312 Introduction to Modern Physics.....	8
Ph 314, 315 Experimental Physics I.....	8
Ph 322 Computational Physics.....	4
Ph 424 Classical Mechanics I.....	3
Upper-division electives.....	12
Sub-total in physics (minimum).....	47-50
Mth 251, 252, 253, 254 Calculus.....	16
Mth 256 Applied Differential Equations.....	4
Mth 261 Applied Linear Algebra.....	4
CS 161, 162 Intro to Computer Science.....	8
One year of general chemistry: Ch 221, 222, 223, 227, 228, 229.....	15
Sub-total.....	47
Select one of following two options:	
Standard option.....	13-16
Ph 316 Methods of Experimental Physics I (4)	
Ph 425 Classical Mechanics II (3) or	
Ph 432 Electricity and Magnetism II (4)	
Two courses in a related area of science or technology (biology, geology, additional chemistry, computer science, electrical circuitry) (6-8)	
Environmental physics option.....	30
Choose 30 credits from the following list	
Ph 451, 471, 490, 492; Bi 251, 252, 253, 357, 475, 476; G 443, 444, 484; Ch 426, 427; CE 371.....	
Total.....	107-127

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling department major requirements except for those major courses offered on a pass/no pass basis only.

Requirements for minor. To earn a minor in physics a student must complete 27 credits (9 credits of which must be taken in residence at PSU, and 12 to 15 credits of which must be upper-division), to include the following:

	Credits
Ph 201, 202, 203 General Physics or Ph 211, 212, 213 General Physics (with Calculus).....	9-12

Ph 214, 215, 216 Lab for Ph 201, 202, 203 or Ph 211, 212, 213.....	3
Upper-division physics electives.....	12-15
Total.....	27

A maximum of one-third of the courses taken under the undifferentiated grading option (pass/no pass) is acceptable toward fulfilling department minor requirements. Additional courses may be required as prerequisites.

SECONDARY EDUCATION PROGRAM

Adviser: **Jon Abramson**

Students who plan to obtain a teaching license with an endorsement to teach physics at the high school level should complete a baccalaureate degree which includes at least 40 credit hours in physics. An acceptable course of study should include:

Ph 201, 202, 203 or 211, 212, 213 General Physics
Ph 214, 215, 216 Physics Laboratory
Ph 312, 313 Modern Physics
Ph 314, 315, 316 Experimental Physics
Ph 321 Current Electricity
Ph 322 Computational Physics

Other courses that may qualify should be discussed with the secondary education adviser.

Courses are to be taken for differentiated grades. A positive recommendation to the Graduate Teacher Education Program will depend on at least a C grade in all physics courses, as well as a cumulative 2.75 GPA.

Graduate programs

The department participates in the Environmental Sciences and Resources Doctoral Program. The Department offers work leading to the degrees of Master of Arts and Master of Science. The M.A. and M.S. programs are designed to further the development of the student as a professional physicist. Specific programs designed to meet the needs of the individual student are planned in consultation with the graduate advisers.

The department offers graduate courses in the fields of classical mechanics, relativity, hydrodynamics, quantum mechanics, electromagnetism, statistical mechanics, atomic and molecular physics, nuclear physics, physics of condensed matter, and biophysics. Current research areas in theoretical and experimental physics are: statistical physics, surface physics (scanning tunneling microscopy, near-field optical microscopy, Mossbauer spectroscopy), and membrane biophysics (transport in biological and artificial membranes), low temperature physics (heat transfer, phase transitions), atoms and molecules at high temperatures and pres-

ures, electron microscopy (atmospheric aerosols, membrane domains, electrodeposition), and global change science.

Degree requirements

University master's degree requirements are listed on page xx. Specific departmental requirements are listed below.

Master of Arts or Master of Science.

The program must be approved by the student's adviser and must include a minimum of 45 graduate credits in science, including not fewer than 30 credits in physics. These 30 credits in physics must be in 500- or 600-level courses, distributed as follows:

	Credits
Seminar (Current Literature).....	3
One of the following three options:	
1. Thesis.....	6
2. Cooperative Education/Internship.....	6
3. Project.....	3

Of the additional credits required in physics, at least 12 must be in courses with numbers above 610 or the graduate-level sequence in quantum mechanics (Ph 511, 618, 619)

The student must also pass a qualifying examination and a final oral examination in Thesis, Cooperative Education/Internship, or Project. Typically, a thesis involves research (either experimental or theoretical), Cooperative Education/Internship involves relevant student experiences obtained in industry or government, and a project involves review of the literature in a certain area of physics. In all cases, a written report, a presentation, and oral exam are necessary.

Doctor of Philosophy in environmental sciences. Specialized studies in the basic principles and techniques of the discipline, when combined with a multidisciplinary environmental science course and seminar, will partially fulfill the requirements for the Ph.D. in environmental sciences and resources. For information on the Ph.D. program, see page 127.

Courses

Courses with an asterisk () are not offered every year. Some lecture courses may be challenged by examination.*

Ph 101, 102 Essentials of Physics (4, 4)

An elementary introduction to the basic principles of physics, their interpretation and application. Designed to accommodate all liberal arts students. Concurrent enrollment in Ph 104, 105 is encouraged. Recommended prerequisite: high school algebra.

Ph 104, 105 Experimental Investigations for Non-science Majors (2, 2)

Discovery labs for essential laws of physics. Investigate gravity, force, acceleration, momen-

tum, heat, work, energy, electricity, light, and radioactivity. Make simple electrical circuits and an electrical motor. Improve computer literacy by working with graphic models of radioactive decay. One two-hour discussion and laboratory period. Concurrent enrollment in Ph 101, 102 is encouraged. Recommended prerequisite: high school algebra.

Ph 121, 122

General Astronomy (4, 4)

An introductory historical, descriptive, and interpretative study of astronomy. Emphasis on the basic scientific methods as they apply to astronomical problems. Detailed examination of the earth, followed by a survey of the other members of the solar system. Survey of the stars, their types, grouping, and motions. Models for the evolution of the Universe and the possibility of life elsewhere. The nature of light, the types of information it carries, and the types of devices used to detect it. Need not be taken in sequence.

Ph 199

Special Studies (Credit to be arranged.)

Ph 201, 202, 203

General Physics (4, 4, 4)

Introductory physics for science majors. The student will explore topics in physics including Newtonian mechanics, electricity, and magnetism, thermal physics, optics, and modern physics. Recommended prerequisites: for Ph 201, Mth 112; for Ph 202, Ph 201 and Ph 214; for Ph 203, Ph 202 and Ph 215. Corequisites: for Ph 201, Ph 214; for Ph 202, Ph 215; for Ph 203, Ph 216.

Ph 211, 212, 213

General Physics (with Calculus) (4, 4, 4)

Introductory physics for students majoring in science and engineering. The student will explore topics in physics including statics, dynamics, electromagnetism, thermodynamics, and optics using the methods of calculus. Recommended prerequisites: for Ph 211, Mth 251; for Ph 212, Ph 211 and Ph 214; for Ph 213, Ph 212 and Ph 215. Corequisites: for Ph 211, Ph 214; for Ph 212, Ph 215; for Ph 213, Ph 216.

Ph 214, 215, 216

Lab for Ph 201, 202, 203 or Ph 211, 212, 213 or Ph 221, 222, 223 (1, 1, 1)

Introductory laboratory for students in General Physics (with Calculus). One 3-hour laboratory period. Corequisites: Ph 201, 202, 203 or concurrent enrollment in Ph 211, 212, 213 or concurrent enrollment in Ph 221, 222, 223.

Ph 221, 222, 223

General Physics (with Calculus) (3, 3, 3)

Introductory physics for students majoring in engineering. The student will explore topics in physics including statics, dynamics, electromagnetism, thermodynamics, and optics using the methods of calculus. Recommended prerequisites: for Ph 221, Mth 251; for Ph 222, Ph 221 and Ph 214; for Ph 223, Ph 222 and Ph 215. Corequisites: for Ph 221, Ph 224; for Ph 222, Ph 215; for Ph 223, Ph 216.

Ph 261, 262

General Astronomy (4, 4)

Introductory historical, descriptive, and interpretive study of astronomy. Emphasis is on the basic scientific methods as they apply to astronomical problems. Detailed examination of the

earth, followed by a survey of the other members of the solar system. Survey of the stars, their types, grouping, and motions. Models for the evolution of the Universe and the possibility of life elsewhere. The nature of light, the types of information it carries, and the types of devices used to detect it. Includes laboratory and/or fieldwork.

Ph 299

Special Studies (Credit to be arranged.)

Ph 311, 312

Introduction to Modern Physics (4, 4)

The revolution in the concepts of physics in the 20th century. Radioactivity, quanta, black-body radiation, relativity. Bohr's theory of the atom. Introduction to quantum mechanics. Atomic, molecular spectroscopy, periodic table. Introduction to nuclear and solid state physics, and elementary particles. Recommended prerequisites: Ph 203, or Ph 213 and Mth 252.

Ph 313

Ideas in Modern Physics (4)

Fundamental ideas of the modern physics of this century. Topics include the development of relativity, quantum mechanics, nuclear and particle physics, and cosmology. Recommended prerequisite: one college-level science course.

Ph 314, 315

Experimental Physics I (4, 4)

Experiments in electrical measurements, digital logic circuits with applications to experimental control and computer interfacing, and analog circuits. Two 3-hour lab periods. Ph 314 requires concurrent enrollment in Ph 321.

Ph 316

Experimental Physics I (4)

Students will perform several experiments illustrating quantum and relativistic effects. The emphasis will be on computer-assisted experimentation and data analysis. Experiments will include instrumentation and counting in nuclear physics, measurement of band gap in semiconductors, measurement of ratio of electron charge to electron mass, speed of light, Frank-Hertz experiment and electron spin resonance. Two 3-hour laboratory periods. Recommended prerequisite: Ph 311.

Ph 319

Solid State Physics for Engineering Students (4)

Survey of solid state physics including topics necessary for understanding crystalline solids and their electron transport processes. Topics include crystal lattices, x-ray diffraction, concepts of quantum physics, the Schrodinger equation, electron tunneling, physical statistics, the free electron theory of metals, periodic potentials, semiconductors, and superconductors. Recommended prerequisite: Ph 213 or 223.

Ph 321

Current Electricity (4)

Electric potential and current; Kirchoff's Laws and equivalent circuits. Transient and A.C. behavior of circuit elements. Theory of operation of diodes and transistors. Recommended prerequisites: Ph 203 or 213; concurrent enrollment in Ph 314.

***Ph 322**

Computational Physics (4)

Formulation and numerical solution of physics problems. Use of computers and graphical dis-

plays to enhance intuition and supplement analytical procedures. Approaches to complex physical situations, especially those involving dissipative, nonlinear and stochastic phenomena. Recommended prerequisite: Working knowledge of at least one computer language.

***Ph 331**

Physics of Music (4)

A series of lectures and laboratories illustrating the basic principles of acoustics and their application to string, wind, brass, and percussion/instruments. Some of the laboratory exercises are adaptable for use in primary and secondary school classes. Recommended prerequisite: one year of music, or one year of a physical science.

***Ph 353**

Radiation in the Environment (4)

Types of radiation and their interaction with matter, including organic tissue; methods of detection and shielding; evaluation of dosage and risk assessment; methods of energy generation based on nuclear energy; nuclear waste and disposal problems. Recommended prerequisites: Ph 203, Bi 253, Ch 223, or equivalent. Calculus, previously or concurrently, is recommended.

***Ph 363**

Color Photography (3)

Principles of color photography, including the physics of color and scientific explanations of the formation of color images on light-sensitive materials. Traces uses and the history of color photography. Recommended prerequisite: one college-level science or photography course.

Ph 365

Fractals, Chaos, and Complexity (4)

Introduction to the basic physical ideas behind fractals in nature, chaos, complexity, and other current concepts in physics, with emphasis on fractals and chaos. Computer simulations and desktop experiments involving fractals, chaos, and complex systems. Recommended prerequisite: astronomy, general physics, or Natural Science Inquiry.

Ph 366

Complexity and the Universe I (4)

Introduction to the basic physical ideas behind complexity and other current concepts in physics. Computer simulations and desktop experiments involving fractals, chaos, and complex systems. Includes laboratory and/or fieldwork. Recommended prerequisite: general physics or Natural Science Inquiry.

Ph 367

Complexity and the Universe II (4)

Continuation of Sci 318/Ph 366. Emphasizes scientific cosmology with a focus on understanding how insights gained from physics and astronomy affect your view of the universe and your place in it. Students participate actively in seeing how some of the information was gathered, to help critically analyze what to believe about the history and arrangement of the universe and what it means to them. Includes laboratory and/or fieldwork. Recommended prerequisite: astronomy, general physics, or Natural Science Inquiry.

Ph 371

Fractals, Chaos, Complexity, and Other Current Topics in Physics (4)

Introductory survey to current concepts in fractals in the natural world, chaos, complexity,

and other related topics in physics. Computer simulations and the use of microcomputers, desktop experiments are an essential part of the course. Recommended prerequisite: one year of general physics.

Ph 375**The Earth's Atmosphere: Global Change and Human Life (4)**

An introduction to the global environment and how human activities are causing climatic changes, ozone depletion, and deforestation. Emphasizes the interrelationship between environmental processes. Deals with the qualitative aspects of how the earth's climate works, how it can be altered by burning of fossil fuels (emissions of carbon dioxide) and by the increasing concentrations of other "greenhouse gases"; how the ozone layer can be depleted by man-made chemicals, and what is being done, or can be done to avert the undesirable consequences of these global changes.

Ph 378**Science Through Science Fiction (4)**

This class uses science fiction literature to examine a wide variety of topics in science. Recommended prerequisites: astronomy, general physics, or Natural Science Inquiry. Also listed as Sci 355; course may be taken only once for credit.

Ph 381**Physical Metallurgy for Engineers (3)**

Crystal structure of metals and their relationships to properties. Phase diagrams of alloys, heat treatment, mechanical properties, and corrosion. Methods of fabrication of metals. Two lectures; one 3-hour laboratory period. Recommended prerequisites: EAS 213, Ph 213 or 223, Ch 223.

Ph 399**Special Studies (Credit to be arranged.)****Ph 401/501****Research (Credit to be arranged.)**

Consent of instructor.

Ph 404/504**Cooperative Education/Internship (Credit to be arranged.)****Ph 405/505****Reading and Conference (Credit to be arranged.)**

Consent of instructor.

Ph 406/506**Special Projects (Credit to be arranged.)**

Consent of instructor.

Ph 407/507**Seminar (Credit to be arranged.)**

Consent of instructor.

Ph 410/510**Selected Topics (Credit to be arranged.)**

Consent of instructor.

Ph 411/511*Introduction to Quantum Mechanics (4)**

An introduction to the formulation and application of wave mechanics; the Schrödinger equation and its application to time-independent problems (both one- and three-dimensional problems); identical particles; approximation methods including mainly time-independent perturbations. Brief exploration of the potential

applications of quantum mechanics to engineering: quantum nano-structures and quantum computers. Recommended prerequisites: Ph 318 or 311, Mth 256. This course is the same as ECE 598; course may only be taken once for credit.

Ph 413/513*Introduction to Solid State Physics (4)**

Experimental and theoretical survey of the lattice and electronic properties of solids with particular emphasis on the properties of electrons in metals. Recommended prerequisite: Ph 411 or 312.

†Ph 415/515**Experimental Optics (3)**

Advanced experiments in physical optics. One 4-hour laboratory period. Recommended prerequisite: Ph 203 or Ph 213.

Ph 424*Classical Mechanics I (3)**

The Newtonian formulation of mechanics. Kinematics and dynamics of particles in inertial and accelerated reference frames. Conservation principles. Central forces, gravitation, and celestial mechanics. Free and forced vibrations. Recommended prerequisites: Ph 203 or 213; Mth 256 previously or concurrently.

†Ph 425/525**Classical Mechanics II (3)**

Advanced formulation of mechanics. Lagrange's and Hamilton's equations. The inertial tensor, free rotations, and rigid body dynamics. Theory of small oscillations, coupled oscillations and normal modes. Recommended prerequisites: Ph 424 and Mth 256.

Ph 426/526**Thermodynamics and Statistical Mechanics (4)**

Concepts of temperature, work, and heat; first and second laws of thermodynamics and applications; thermodynamic potentials; heat engines, Carnot cycle, and ideal gases; entropy and its statistical interpretation; kinetic theory of gases; classical and quantum statistics; introduction to statistical mechanical ensembles. Recommended prerequisites: Ph 203 or 213, Mth 254, and Ph 311.

†Ph 431/531, 432/532**Electricity and Magnetism (4, 4)**

Advanced study of electricity and magnetism covering field and potential of charge arrays, electrostatic field energy, images, multipoles, Laplace's equation, Biot-Savart and Ampere's laws, magnetic field energy, vector potential, displacement current, dielectrics and their microscopic models, electromagnetic wave equations, boundary conditions, energy radiation, magnetic materials and their microscopic models. Recommended prerequisites: Ph 312 and Mth 256.

Ph 434/534*Methods of Mathematical Physics (4)**

A survey of methods of applied mathematics used in modern physics, to include: vectors, matrices, operators, and eigenvalues; perturbation theory and series expansion; variation and optimization; numerical methods; transforms; and special functions. Recommended prerequisites: Ph 312 and Mth 256.

Ph 440/540, 441/541*Physics of Solid State Devices (4, 4)**

This is a survey intended to provide the foundation necessary for understanding of function, technology and design of solid state devices, rather than their application. Topics will include: introduction to and application of concepts of quantum physics to solids, effect of periodicity in solids on electron energy states, electron statistics, metals, insulators, semiconductors and superconductors, thermionic and field assisted electron emission, electron scattering and mobility of charge carriers, intrinsic and extrinsic semiconductors, quantitative treatment of p-n junction, diffusion and recombination of excess carriers, quantitative treatment of electron injection, majority and minority components of the junction current, breakdown, quantitative treatments of bipolar junction transistor, field effect transistor and tunnel diodes, physics of metal-semiconductor and metal-insulator-semiconductor junctions and devices, superconductivity and superconducting devices, DC and AC Josephson effects, Josephson junctions, superconductive quantum interference devices. Recommended prerequisite: Ph 312 or 318.

Ph 451/551, 452/552**Electron Microscopy (4, 4)**

Electron optics theory, specimen preparation and experimental work with transmission and scanning electron microscopes, Microchemical analysis with an energy dispersive spectrometer. Specimens from all the sciences. Two lectures, one 3-hour laboratory period. Recommended prerequisites: one year of general physics and one year of any other science.

†Ph 464/564**Applied Optics (4)**

An overview of optics and such principal application as fiberoptics; chemical, biological, and physical sensors; optical information processing, acousto-optics; lasers and detectors. Recommended prerequisites: Ph 203 or 213 or 223, Mth 254. This course is the same as ECE 594; course may only be taken once for credit.

Ph 471/571**Atmospheric Physics (4)**

Cycles of trace gases in the earth's atmosphere and their role in the environment. Emission, dispersal and removal of natural and man-made trace constituents in the atmosphere that determine the earth's climate and the stratospheric ozone layer. Mass Balance Models for quantitative analysis of atmospheric composition and trends. Climate change and perturbations of stratospheric ozone in modern times. Lays a foundation for the understanding of the complex issues of climatic change and its many linkages and feedbacks. Questions regarding environmental policy and action are examined in the light of current model results, their predictions and uncertainties. Recommended prerequisites: one year each of calculus and calculus-based physics, introductory course in differential equations.

† Does not carry graduate credit for M.A., M.S. in physics.

Ph 472/572**Introduction to Nonlinear Dynamics and Chaos (4)**

Introduction to basic theoretical and experimental tools to study chaos and nonlinear behavior. Desktop experiments and computer simulations of chaotic systems. Recommended prerequisites: one year of general physics.

†Ph 475/575**Stellar Astronomy Online for Educators (4)**

Class will access online materials in stellar astronomy education to help current and prospective science teachers update their knowledge of recent developments in astronomy. Recommended prerequisite: one year of general physics.

†Ph 476/576**Observational Astronomy (2)**

Emphasis on hands-on activities and the observation of our own night sky. Observation of planets, sun, moon, globular clusters, galaxies, and black holes. Observational techniques including the use of telescopes, binoculars, and photography will be covered. Observational field trip to an observatory at a dark sky site. Recommended prerequisite: one year of general physics.

Ph 477/577**Air Pollution (4)**

Air pollution meteorology needed to understand air pollution, atmospheric dispersion models, K-theory, box models and receptor models. Use of simple computer models. This course is a foundation for the quantitative understanding of air pollution: At any point in the environment (receptor), how much pollution is caused by a known source? If there are many sources, how much pollution does each source contribute at a receptor? Recommended prerequisites: Ph 213 or 223, one year of calculus, introductory course in differential equations.

Ph 478/578**Applications of Air Pollution Modeling (4)**

Students work in teams to solve an air pollution problem using dispersion and receptor modeling techniques. It teaches the complementary nature of receptor and dispersion modeling. Teaches the advantages and disadvantages of the two approaches to air pollution modeling when either approach is applicable. Students use established computer models and become proficient in their use. Recommended prerequisite: Ph 477/577.

Ph 481/581, 482/582, 483/583*Physical Metallurgy (2, 2, 2)**

Introduction to principles of physical metallurgy. Includes the atomic and crystallographic structures of metals and alloys; defects in structure and the importance of them in determining the properties of metals; phase diagrams of alloy systems and examples of important systems; diffusion and phase transformations, emphasizing the solid state; plasticity and fracture of crystals; and corrosion. Recommended prerequisites: Ph 203, Ch 223.

Ph 484/584, 485/585, 486/586*Physical Metallurgy Laboratory (1, 1, 1)**

Experimental studies of the structure of metals by light microscope, X-ray diffraction, and microhardness techniques. Heat treatment of metals and studies of the resulting structural changes. Corequisite: concurrent enrollment in Ph 481, 482, 483.

Ph 490/590, 491/591*Cellular and Molecular Biophysics (4, 4)**

An introduction to the physical ideas and methods in the studies of biological phenomena, organization, structure, and function at the cellular and molecular level. Atomic and molecular structures, energy and interacting forces relating to cellular and molecular biophysics will be discussed. Recommended prerequisites: Ph 203, Bi 253, and Ch 223. Calculus, previously or concurrently, is recommended.

Ph 503**Thesis (Credit to be arranged.)****Ph 601****Research (Credit to be arranged.)****Ph 603****Dissertation (Credit to be arranged.)****Ph 604****Cooperative Education/Internship (Credit to be arranged.)****Ph 605****Reading and Conference (Credit to be arranged.)****Ph 606****Special Problems/Projects (Credit to be arranged.)****Ph 607****Seminar (Credit to be arranged.)****Ph 610****Selected Topics (Credit to be arranged.)*****Ph 611, 612****Physics of Solids and Liquids (4, 4)**

The theory of mechanical, thermal, electrical, magnetic, and optical properties of solids and liquids. Recommended prerequisite: Ph 413.

Ph 618, 619**Quantum Mechanics (4, 4)**

A detailed discussion of the approximation methods for solving the time-independent Schrödinger equation; scattering theory in terms of stationary unbound states; time-dependent theory including the perturbation method; the two-level problem and its application to laser operation. Dirac's formulation using bra and ket; different time-evolution pictures; concept of density matrices; Berry's phase; quantum theory of angular momentum; Feynman's path integral formulation; introduction to relativistic quantum mechanics; issues on the fundamental aspects of quantum mechanics including Bell's theorem, the EPR paradox, hidden-variable theory; and Schrödinger's cat problem. Recommended prerequisites: Ph 411/511, 425.

Ph 624, 625*Classical Mechanics (4, 4)**

Advanced treatment of analytical mechanics of particles, systems of particles, and rigid bodies. Methods of Lagrange, Hamilton, and Jacobi. Symmetry and conservation laws. Recommended prerequisite: Ph 425.

Ph 626*Hydrodynamics (4)**

The theory of fluids and continuous media. Equations of continuity, Euler's equation, flow fields, and applications. Recommended prerequisite: Ph 625.

Ph 631, 632, 633*Electromagnetic Fields and Interactions (4, 4, 4)**

Classical description of the electromagnetic field: classical electron theory and plasmas. Prerequisites: Ph 431. This course is the same as ECE 635, 636, 637; course may only be taken once for credit.

Ph 641, 642*The Physics of Atoms and Molecules (4, 4)**

Radiation from atoms and molecules, Raman effect. Structure of one and many electron atoms, Zeeman effect, Stark effect, Lamb shift, hyperfine structure, line intensity. Quantum mechanics of diatomic and polyatomic molecules. Symmetry. Molecular electronic transitions. Valence and resonance. Recommended prerequisite: Ph 411.

Ph 664, 665, 666*Statistical Mechanics (4, 4, 4)**

Foundations of statistical mechanics and kinetic theory; statistical interpretation of thermodynamics; ensembles in classical and quantum systems; transport phenomena. Recommended prerequisite: Ph 619 or 625.

Ph 679

Advanced Atmospheric Physics (4) Advanced course to provide a working knowledge of base models for studying global change including the greenhouse effect, global warming, stratospheric ozone depletion from man-made chemicals, tropospheric chemistry of HO and O₃ and transport modeling. Recommended prerequisites: Ph 578.

† Does not carry graduate credit for M.A., M.S. in physics.

Preprofessional Programs

Portland State offers courses which meet the preprofessional requirements of professional schools within the Oregon State System of Higher Education and, in most cases, the requirements of out-of-state professional schools as well. The program schedules in this section are typical and will vary in individual cases. The majority of preprofessional programs are based on the graduation requirements of other institutions. Students choosing to continue at PSU, rather than pursue a preprofessional transfer program should meet with a faculty adviser to determine PSU graduation requirements. All preprofessional students should check with a faculty adviser to keep current on all recent changes and remaining requirements.

Agriculture

503-725-3851

Adviser: **A. Yeakley**

Freshman Year	Credits		
	F	W	S
Bi 251, 252, 253 Principles of Biology	5	5	5
Ch 104, 105, 106 Introductory Chemistry	4	4	4
Ch 107, 108, 109 Introductory Chemistry Laboratory	1	1	1
Mth 111, 112 Introductory College Mathematics	4	4	-
Mth 241 Calculus for Management and Social Sciences or Mth 251 Calculus I	-	-	4
Wr 121 English Composition (any term)	3	-	-
PHE 295 Health and Fitness for Life (any term)	-	3	-
Arts and letters or social science electives (any term)	-	3	-

Allied Health

503-725-3822

Chiropractic, Clinical Laboratory Science (Medical Technology), Cytotechnology, Dental Hygiene, Naturopathic Medicine, Occupational Therapy, Optometry, Physical Therapy, Physician Assistant, Radiation Therapy, and Veterinary Medicine

Advisers: **F. McClurken-Talley, L. Marsh**

Portland State University offers preprofessional programs for students wishing to prepare themselves for admission to a variety of allied health professional schools. These programs consist of a two- to four-year preparatory phase followed by a one- to four-year professional phase, and in most cases admission to the professional school occurs before the award of the baccalaureate degree.

A typical freshman program includes biology, math, chemistry, and general education courses; however, individual programs vary depending on the student's academic preparation and the unique graduation requirements of the institutions granting the particular professional degrees. It is essential that a student's academic program be planned with a health sciences adviser, and accessible advising is available in the College of Liberal Arts and Sciences Health Sciences Advising Center, where professional advisers can help with course scheduling, declaring a major, preparing for graduate admission tests, choosing a professional school, and organizing letters of recommendation.

Dentistry, Medicine, Osteopathy, and Podiatry

503-725-3822

Adviser: **F. McClurken-Talley**, Health Sciences Advising Office, 491E Neuberger Hall

Portland State University offers preprofessional programs for students wishing to prepare themselves for admission to dental, medical, osteopathy, or podiatry schools. A bachelor's degree is required prior to matriculation by the medical school of Oregon Health & Science University. Three years' work with at least one year at Portland State University plus the transfer of up to 48 upper-division credits from a dental school upon the satisfactory completion of one year at the dental school will result in the awarding of a Bachelor of Science or a Bachelor of Arts degree in biology or science.

A typical freshman program includes biology, math, chemistry, and general education courses; however, individual programs vary depending on the student's academic preparation. Before planning a curriculum, students must meet with an adviser to determine placement in math and science courses. In most cases a student must also have an academic adviser in their major. While there is no preferred major, a broad education is encouraged. In addition to specific requirements in

math and the sciences, students should build a strong foundation in the traditional liberal arts curriculum.

Accessible advising is available in the College of Liberal Arts and Sciences Health Sciences Advising Center, where professional advisers can help with course scheduling, declaring a major, preparing for the MCAT and DAT, choosing a professional school, and organizing letters of recommendation.

For students who already have a bachelor's degree but are lacking the specific science prerequisites for medical or dental school, PSU offers a post-baccalaureate program that can be completed in one year (including Summer Session) of intensive study. Postbaccalaureate students, with sufficient background, start with general chemistry in the summer and continue with organic chemistry, biology, and physics during the academic year.

Preprofessional programs: K-12 Teacher Preparation

Portland State University educates prospective K-12 teachers in the Graduate School of Education. Teacher licensing is part of the Master of Education degree and is achieved through the Graduate Teacher Education Program (GTEP) in the Department of Curriculum and Instruction (note: programs in bilingual education, ESL, special education, library/media, counseling, adult education, and administration are also available in the Graduate School of Education and may be contacted by calling 503-725-4619.)

Undergraduates at Portland State University may prepare for competitive admissions by consulting with appropriate advisers, by achieving high academic standards in the recommended and required courses for specialization and in courses in liberal arts, and by documenting successful experience with children in the public schools. Passing scores on teacher exams mandated by the Oregon Teachers Standards and Practices Commission (TSPC) are also required for entry into the GTEP.

PRE-EDUCATION UNDERGRADUATE ADVISING

Adviser: K. DeVoll

Early childhood and elementary education: Prospective elementary teachers should consult with the College of Liberal Arts and Sciences, Advising Center, 491E Neuberger Hall, (503-725-3822).

Middle school education: Prospective middle school teachers who have a preference for teaching multiple subjects (as in elementary education) should follow advice from the College of Liberal Arts and Sciences (503-725-3822). Those who prefer to get a content area specialization that may also apply to teaching at the high school should contact the pre-education academic adviser in the academic department of choice.

High school education: Prospective high school teachers should contact the pre-education academic adviser within their major department. Academic majors and their respective secondary endorsements are as follows: biology (biology and general science); physical education (physical education); history, anthropology, sociology, philosophy, political science, geography, and economics (social studies); health (health); mathematics (mathematics); English (English language arts); art (art); foreign languages and literatures (foreign language); music (music); chemistry (chemistry); physics (physics); business and economics (business); drama (drama); speech (speech). Note: A current adviser list is available from the GTEP admissions secretary, 602 School of Education Building.

Graduate Teacher Education Program advising: Students considering application to the PSU GTEP should make an appointment to attend an advising session for prospective applicants by calling 503-725-4619 or stop by the information desk on the second floor of the School of Education Building.

Preparatory coursework

early childhood and elementary educators: *Required:* Art 312 Art in the Elementary School; Lib 428/528 Children's Literature, K-5; Mth 211, 212 Foundations of Elementary Mathematics (8 credits); Music 381 Music Fundamentals; Psy 311 Human Development; *Recommended:* Ed 420 Introduction to Education and Society; CI 432 Computer Applications for the Classroom; Mth 213 Foundations of Elementary Mathematics III.

Middle, junior, and high school educators: In addition to a strong liberal arts education, all students should complete the requirements for their major in the

endorsement area of their choice. *Required:* Psy 311 Human Development; *Recommended:* ED 420 Introduction to Education and Society, CI 432 Computer Applications for the Classroom.

Forestry

503-725-3851

Advisers: A. Yeakley

Freshman Year Credits

	F	W	S
Bi 251, 252, 253 Principles of Biology	5	5	5
Ch 104, 105, 106 Introductory Chemistry	4	4	4
Ch 107, 108, 109 Introductory Chemistry Laboratory or for Forest Products or Forest Engineering:	1	1	1
Ch 106 Introductory Chemistry			
Ch 109 Introductory Chemistry Lab III			
Ch 221, 222 General Chemistry			
Ch 227, 228 General Chemistry Laboratory			
Mth 251, 252, 253 Calculus	4	4	4
Wr 121 English Composition (any term)	3	-	-
PHE 295 Health and Fitness for Life (any term)	-	3	-
Electives	-	-	3

Law

For Liberal Arts and Sciences students: **R. Kevin Hill, Philosophy, 503-725-3594**

For Urban and Public Affairs students: **R.W. Lockwood, Administration of Justice, 503-725-4014; R. Lawrence, Political Science, 503-725-3921.**

Law schools in the United States, unlike medical, dental, and other professional schools, generally do not require specific prelaw majors or particular courses of study in preparation for law school. They do recommend that the prospective law student acquire a broad liberal education providing a sound basic understanding and appreciation of arts and letters, science, and social science.

All three Oregon law schools, Lewis & Clark, Willamette, and the University of Oregon, and the major law schools in other states, now require that applicants for admission have a bachelor's degree. Valuable information about prelaw study and law school admissions is contained in the Pre-Law Handbook, available at bookstores, from Educational Testing Service, Box 944, Princeton, NJ 08540, and in the annual Law School Admission Test/Law School Data Assembly Service Information Book, available in the Department of Political Science and in the Counseling and Testing Services offices.

Prelaw students are free to select their own undergraduate programs (there is no "prelaw" major as such), but they are advised to choose broad cultural fields in which they have keen intellectual inter-

ests, such as economics, history, literature, mathematics, philosophy, political science, science, or sociology, to suggest only some examples. Business administration and administration of justice, when strongly supplemented with work in arts and letters, science or social science, are also suitable.

Students are cautioned not to have a large number of ungraded or pass/no pass credits. Law schools also advise against concentration in courses given primarily as vocational training. Whatever the undergraduate program, prelaw students should develop as fully as possible the ability to read with understanding, to think logically, and to express themselves clearly and cogently in written and oral work. The importance of analytical skills in dealing with concepts, abstract ideas, and complex fact situations, and of communications skills, cannot be overemphasized, for lawyers must be able to research, analyze, and communicate.

And since law is a part of the larger social order, the prelaw student should seek to understand the political, social, economic, and cultural institutions within which the legal system functions. As illustrative of specific subjects (with PSU course numbers) which may be helpful toward that end, the following are suggested with a reminder that they are not prerequisites for law school admission: introductory economics (Ec 201, 202); ethics (Phl 202, 445, 446, 447); U.S. history (Hst 201, 202); legal history, constitutional history (Hst 410, 407); political theory (PS 381, 482); constitutional interpretation, constitutional law, the judicial process (PS 321, 422, 423, 407); administration of justice (AJ 420, 440, 460); psychology (Psy 204); general sociology (Soc 200). In addition, many law schools recommend taking a course in accounting principles.

Completion of the Law School Admission Test (LSAT), administered nationally by the Educational Testing Service, is required by nearly all law schools. It is given at Portland State five times each year, but should be taken at the earliest possible date in the student's senior year. The test measures writing ability and general aptitude for legal studies. It does not test knowledge of specific subjects, and is in no sense a test of knowledge about law. There is no standard "passing score" on the test, for each law school makes its own evaluation of an applicant's admissibility, using the LSAT score, GPA (grade point average) and such other factors as it deems relevant.

Competition for admission to law schools is very keen; thus high grade point averages and high LSAT scores are very

desirable. Many law schools use the LSAT score and the GPA in computing a total numerical score which constitutes one important factor in determining admissibility. In such a computation a higher score on the LSAT can help to offset a lower GPA or vice versa. Although the LSAT may be repeated, that is generally advisable only if there is strong reason to believe that the test score was due to factors other than basic aptitude, such as illness or extreme nervousness. When the LSAT is repeated, law schools customarily average the test scores. Information concerning the exact test dates is available from Counseling and Testing Services and the law advisers, Departments of Political Science and Administration of Justice.

Nursing

503-725-3822

Adviser: L. Marsh

To earn a Bachelor of Science degree in nursing, one must complete a two-year preparatory phase and a three-year professional phase. The preparatory phase, that is, the required courses that must be completed before entering the professional phase of the program, can be taken at Portland State University. PSU does not offer the professional phase; you must be accepted by a nursing program, such as those at Oregon Health & Science University (OHSU) in Portland, OHSU-SOC in Ashland, OHSU-OIT in Klamath Falls, OHSU-EOSC in La Grande. Private schools such as, Linfield College-Good

Samaritan School of Nursing in Portland, the University of Portland in Portland, Concordia University, George Fox University, or the Walla Walla College School of Nursing at Portland Adventist Medical Center, offer a two-year professional phase. The PSU preparatory phase is designed to meet the requirements for transferring into baccalaureate nursing at one of the state-supported programs (BSN). Although there are many requirements in the preparatory phase common to all nursing programs, each nursing school has some preparatory requirements specific to that program.

Most professional programs require that a C or above be earned in all preparatory courses. Completion of the preparatory phase does not guarantee acceptance into the professional phase as admission is limited and competitive. You will need to meet the requirements for a bachelor's degree as set by the institution where you complete the professional phase.

For information about requirements and admissions, contact the College of Liberal Arts and Sciences Advising Center, 491E Neuberger Hall, 503-725-3822.

Pharmacy

503-725-3822

Adviser: F McClurken-Talley

Portland State University offers a prepharmacy curriculum which prepares the student for admission to the Oregon State University School of Pharmacy and Pacific University School of Pharmacy.

In September of 1999, OSU School of Pharmacy began their new four-year Doctor of Pharmacy degree. Prepharmacy students intending to apply to the program should discuss their academic preparation with the prepharmacy adviser.

To be eligible for admission into the school of pharmacy, students must complete a minimum of 135 quarter credits to include:

Bi 251, 252, 253 Principles of Biology
 Ch 221, 222, 223 General Chemistry
 Ch 227, 228, 229 General Chemistry Laboratory
 Ph 201, 202, 203 General Physics
 Ph 204, 205, 206 General Physics Lab
 Mth 241 Calculus for Management and Social Sciences or
 Mth 251 Calculus I
 Stat 243 Introduction to Probability and Statistics I
 Bi 301, 302, 303 Human Anatomy and Physiology
 Bi 336 Cell Biology
 Bi 480 Microbiology
 Bi 488 Microbiology laboratory
 Ch 334, 335, 336 Organic Chemistry
 Ch 337, 338 Organic Chemistry laboratory
 Psy 200 or 204 General Psychology
 Sp 218 Interpersonal Communication
 Ec 201 Principles of Economics
 PHE 252 First Aid

In addition to the above mentioned courses, students must also complete general education requirements, as well as any remaining major requirements, from the school where they plan to receive their bachelor's degree. Students who plan to graduate from PSU must complete the University Studies curriculum, while students who plan to graduate from OSU must complete OSU's general education requirement called Baccalaureate Core. Please see the adviser for details.

Psychology

317 Cramer Hall
 503-725-3923
www.psy.pdx.edu/

B.A., B.S.

Minor

M.A., M.S.

Ph.D. in Systems Science—Psychology

Ph.D.—Participating department in Urban Studies Doctoral Program

Undergraduate programs

The program in psychology has been planned with the idea that all students, regardless of major, will have to solve significant psychological problems in their relations with others, at home and at

work, in their personal decisions, and in their efforts to understand the problems and processes of society. The program serves students intending to do professional work in the field; liberal arts majors who are interested in psychology as part of a liberal arts education; and students of other social sciences or in a professional field such as business, education, medicine, or the ministry who seek a working knowledge of psychological principles.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. The major in psychology requires a minimum of 48 credits in the field. Students must complete the required courses in statistics before taking any 400-level course or any course with statistics as a prerequisite.

All students majoring in psychology, especially those that are considering graduate work in psychology, are encouraged to plan their program with an adviser from the Department of Psychology no later than the beginning of their first term of junior standing.

It is recommended that freshmen not enroll in psychology courses unless they have a B average (3.00 GPA) or above in high school.

In addition to meeting the general University degree requirements, the student must meet the following requirements for major:

	Credits
Psy 200, 204	8
Psy 321	4
Upper-division psychology courses (300- and 400-level), including 16 credits from courses listed as 410 to 498, and excluding courses numbered 399 and 401 to 409, inclusive.....	36
Sub-total in psychology	48
Stat 243.....	4
Stat 244.....	4
Total	56

Psy 201, 202, and 203 are the equivalent of Psy 200 and 204; therefore, credit will not be given for 200 and 204 if a student has been given credit for 201, 202, and 203.

All majors are encouraged to begin their work in statistics as soon as possible in preparation for Psy 321, which is a prerequisite for many of the upper-division courses. Besides taking courses in a range of subjects in psychology, majors are also encouraged to take courses in human culture and society, human biology, and philosophy of science.

All courses submitted to satisfy the requirements for a major in psychology, including the mandatory math courses, must be passed with a grade of C- or above. Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling department major requirements.

Students considering graduate work in psychology should be especially well prepared in mathematics and should take the sequence in experimental psychology (Psy 454, 455). They should consider participating in research with a faculty member. They are encouraged to develop breadth by pursuing interests in diverse fields outside psychology before beginning the greater specialization of graduate work.

In addition to requirements for major in psychology, a student considering graduate work in psychology should take the following recommended courses: Mth 241; Bi 101, 102, 103, (104, 105, 106); Psy 427, Psy 454, and Psy 455.

Requirements for minor. To earn a minor in psychology a student must complete 28 credits (8 credits of which must be taken in residence at PSU), to include the following:

	Credits
Psy 200, Psy 204.....	8
20 credits in 300-level psychology courses (excluding 399).....	20
Total	28

All courses submitted to satisfy the requirements for a minor in psychology must be passed with a grade of C- or above. Courses taken under the undiffer-

entiated grading option (pass/no pass) will not be accepted toward fulfilling department minor requirements.

SECONDARY EDUCATION PROGRAM
Adviser: C. Smith

(See *General Studies: Social Science*, page 142)

Graduate programs

The Department of Psychology offers work leading to the degrees of Master of Arts and Master of Science. The department also offers a Ph.D. in Applied Psychology. In addition, the Department of Psychology participates in the Urban Studies Ph.D. program. For information relating to the Ph.D. program in urban studies, see page 309.

Graduate training in psychology at Portland State University provides a sound basis in traditional areas of psychology, while emphasizing applications of psychological theory and research to problems of contemporary society.

The program focus is on applied psychology with an emphasis on three areas: Applied Developmental, Industrial/Organizational, and Applied Social/Community Psychology. The aim is to prepare graduates for research and service roles in a variety of settings such as government agencies, businesses, educational systems, and hospitals. It should be noted that the graduate program in psychology does not offer graduate degrees in clinical or counseling psychology.

Admissions requirements

Applications may be made to either the doctoral (Ph.D. in Applied Psychology) or the terminal master's degree (M.A. or M.S. in Psychology) programs. Those admitted to the master's program may later apply for admission to the doctoral program, conditional upon demonstrated competence at the master's level. Applicants to either program are expected to have had preparation in experimental psychology and methods of data collection and analysis, in addition to content areas in psychology. Admissions granted to applicants who do not meet these requirements may be conditional upon completing remedial coursework.

Applicants should provide the following documents: Graduate Record Examination scores (i.e., GRE scores for verbal, quantitative, and analytic abilities); three letters of recommendation from individuals knowledgeable about the applicant's abilities (preferably from faculty members at colleges or universities attended); transcripts; and a 500 to 1000-word statement

of academic and personal goals. The psychology subject test of the GRE is not required. Completed applications should be received by January 15 for admission the following academic year.

Degree requirements

Master of Arts or Master of Science. Candidates for the master's degree must earn a minimum of 56 credits in approved graduate courses, including thesis. Proficiency in a foreign language is required for the Master of Arts degree, but not for the Master of Science degree. Students' individual programs are determined in consultation with their advisers.

The required coursework for the master's program is as follow:

	Credits
Psy 521/621, 522/622	10
Psy 514/614, 515/615, 516/616, 517/617 (Three from this list)	12
Electives	22
Practicum/Research	4
Thesis	8
Total	56

Thesis. The student must submit and defend the thesis at an oral examination.

Doctor of Philosophy in applied psychology. Candidates for the Ph.D. in applied psychology must earn a minimum of 108 credits in approved graduate courses. Candidates will undertake a program of study determined in consultation with an advisory committee. The doctoral program is equivalent to the two-year master's program described above plus additional required courses:

Comprehensive examination. The comprehensive exam is comprised of exams in the major area, the minor area, and research methods.

Dissertation. The student must submit and defend the dissertation at an oral examination.

Courses

Courses with an asterisk () are not offered every year.*

Note: Nonmajors can satisfy the 200-level psychology prerequisites for upper-division psychology courses by taking either Psy 200 or 204. Majors must take both Psy 200 and 204. Psy 201, 202, and 203, are the equivalent of Psy 200 and 204; therefore, credit will not be given for 200 and 204 if a student has been given credit for 201, 202, and 203.

Psy 200
Psychology as a Natural Science (4)

Covers the scientific foundations of human behavior in areas such as physiological and biological psychology, cognitive, moral, and emotional development, sensation and perception, consciousness, learning, thinking and memory. Also focuses on issues in experimental design and teaches students how to critically evaluate psychological research.

**Psy 204
Psychology as a Social Science (4)**

Explores human individuality and the social context of behavior. Topics include intelligence, personality, motivation, social psychology, coping with stress, and psychological disorders. Describes theories and research findings in the context of social issues and introduces students to challenges of psychological measurement. Recommended as a first psychology course for both majors and nonmajors.

**Psy 207
Introduction to Applied Psychology (4)**

A survey of selected applications of concepts and methodologies from the different areas of psychology such as experimental, industrial/organizational, social, and developmental. Recommended prerequisites: Psy 200, 204.

**Psy 299
Special Studies (Credit to be Arranged.)**

Prerequisite: Psy 204.

**Psy 300
Personal Decision Making (4)**

How to make wiser decisions. Ways to think more creatively and more logically in making both everyday choices and major life decisions. Instruction and hands-on experience.

**Psy 310
Psychology of Women (4)**

Review and evaluate assumptions underlying psychological research on women. Survey the research in areas such as the development of sex differences, acquisition of gender roles and maintenance of gender stereotypes. Explore the pertinence of these findings to topical areas such as women's work roles, women and mental health, and the women's movement. Recommended prerequisite: 4 credits in psychology.

**Psy 311
Human Development (4)**

Development of the individual across the lifespan, from conception to death. Surveys the biological bases and social contexts of developmental processes (e.g., cognitive, social, emotional development). Implications of research for education, parenting/family relations, and social policy. Recommended prerequisites: Psy 200 and 204, or appropriate Sophomore Inquiry course.

**Psy 317
Personal and Social Adjustment (4)**

Traces the course of normal adjustment with special interest in those factors which are instrumental in shaping human behavior. Concepts such as emotional maturity, psychological stress, and maladjustment are considered. Recommended prerequisite: 4 credits in 200-level psychology.

**Psy 321
Research Methods in Psychology (4)**

Study of methods for evaluating the quality of psychological measurements, including various concepts of reliability and validity, and item analysis techniques; common sources of invalidity in the interpretation of psychological data; strategies of selecting and analyzing observations which minimize these sources of invalidity. Recommended prerequisites: Stat 243, 244, and 4 credits in psychology.

**Psy 340
Principles of Behavior Analysis (4)**

A course in the concepts of behavior analysis. Includes presentation of respondent and operant conditioning, extinction, response differentiation, schedules of reinforcement, shaping, escape and avoidance behavior, stimulus discrimination, punishment and similar concepts. The course is intended to provide the student with a thorough introduction to a developing technology of behavior.

**Psy 342, 343 I, II
Social Psychology (4, 4)**

Analysis of the psychological and sociological processes in social interaction and in various forms of group behavior. Particular attention to social cognition, roles, and to group origins, functions, ideology, membership, and leadership. Recommended prerequisites: Soc 200, or Psy 200 or 204, for 342; Soc 342 or Psy 342 for 343. Credit will not be given for both Soc 342 and Psy 342, or both Soc 343 and Psy 343.

**Psy 345
Motivation (4)**

A course on the causes for acquiring, choosing, or persisting in specific actions within specific circumstances. Students review the conditions, principles, and theories of motivation. Recommended prerequisite: Psy 200 or 204.

**Psy 346
Learning (4)**

Conditions, principles, and theories of learning. Assessment of experimental methods and results in relation to current theory. Recommended prerequisite: 4 credits in 200-level psychology.

**Psy 347
Perception (4)**

Introduction to the principles and theories of visual and auditory perception. Topics include sensory pathways, color perception, perceptual illusions, and the role of knowledge and cognitive factors in perception. Recommended prerequisite: Psy 200.

**Psy 348
Cognition (4)**

Processes by which we form representations of reality, and strategies we use for manipulating those representations in order to explore possible actions and outcomes. Includes topics in perception, attention, memory, imagery, language, comprehension, problem solving, creative thinking, judgment, reasoning, and decision making. Recommended prerequisite: 4 credits in 200-level psychology.

**Psy 350
Counseling (4)**

A survey of counseling and interviewing procedures, contributions of psychological theory to counseling techniques. Recommended prerequisite: 4 credits in 200-level psychology.

***Psy 357
Comparative Psychology (4)**

A study of the behavioral differences and similarities within the phylogenetic scale. Emphasis on the examination of the evolution of the behavior of individuals and species, paying particular attention to the basic concepts of psychology, such as sensation, perception, learning, and social processes. The role of animals in theories and as models for human behavior.

Recommended prerequisite: 4 credits in 200-level psychology.

***Psy 360
Industrial/Organizational Psychology (4)**

The scientific study of human behavior in work settings, covering the adjustments people make to the places they go, the people they meet, and the things they do in their occupational activities of all types. Recommended prerequisite: Psy 200 or 204.

**Psy 361
Industrial Psychology (4)**

Overview of the scientific study of people in work settings, including job analysis, the measurement of individual differences for hiring and promoting workers, the assessment of employee performance through performance appraisal systems, and employee training. Course contains a substantial component focused on application through a community-based learning or class project.

**Psy 362
Organizational Psychology (4)**

Overview of the scientific study of people in work settings, including work motivation, leadership, organizational change and development, group processes, work and family issues, stress, job attitudes, and occupational health psychology. Course contains a substantial component focused on applications such as community-based learning or class projects.

**Psy 399
Special Studies (Credit to be arranged.)****Psy 401/501
Research (Credit to be arranged.)**

Consent of instructor.

**Psy 404/504
Cooperative Education/Internship (Credit to be arranged.)****Psy 405/505
Reading and Conference (Credit to be arranged.)**

Consent of instructor.

**Psy 407/507
Seminar (Credit to be arranged.)**

Consent of instructor.

**Psy 409/509
Practicum (Credit to be arranged.)**

Supervised psychological practice including observing, studying, and participating in the activities of private settings or community service agencies such as: schools, mental health clinics, correctional agencies, and day care centers. Supervision may include guided reading, daily journals, and evaluative reports.

**Psy 410/510
Selected Topics (Credit to be arranged.)*****Psy 427/527****History and Systems of Psychology (4)**

A survey of the history of psychology and of past and current theoretical approaches in psychology. Study of the historical roots of current theories in perception, learning, motivation, personality and other fields. Recommended prerequisites: Stat 243 and 244, at least 18 credits in psychology, including Psy 321.

***Psy 430/530
Applied Social Psychology (4)**

Explores current and potential applications of social psychological theories and research methods, with a focus on work conducted in

field settings. As a final project, each student examines an applied area of their own choosing (previous projects have focused on normative role transitions, responses to natural disasters, political attitudes, conflict resolution, and intergroup relations). Recommended prerequisites: Stat 243 and 244, Psy 321, 342, or 343.

***Psy 431/531**

Psychology of Men and Masculinities (4)

Reviews various social and personality theories that describe the psychology of men and the diverse forms and expressions of masculinity across cultures. Applies these theories to a wide range of issues in men's lives, including emotions, health, work and family roles, sexuality, relationships, and violence. Prerequisites: four credits in psychology.

***Psy 432**

Personality (4)

Personality structure and theory. Recommended prerequisite: Stat 243 and 244, eight credits in psychology, including Psy 321.

***Psy 433**

Introduction to Psychological Testing (4)

Covers theoretical and practical issues related to psychological tests used in educational, organizational, and clinical settings. Testing areas covered include intelligence, personality, values, interests, moral development, aptitudes and psychological disorders. Students will learn how to evaluate the quality of a psychological test and how to make informed choices about whether a test is appropriate for a particular setting. Recommended prerequisites: Psy 321 and Stat 243 and 244.

***Psy 434/534**

Introduction to Psychopathology (4)

Course content will survey the development of modern ideas of mental illness, the origins of mental illnesses, the diagnostic system and the clinical syndromes, and methods of treatment of neuropsychiatric disorder. This course does not produce diagnosticians of mental illness but is a preparation for the clinical study of diagnosis. Recommended prerequisites: Psy 200, 204, Stat 243 and 244, and at least 6 additional credits in psychology, including Psy 321.

***Psy 436/536**

Performance Appraisal and Feedback (4)

Applications of psychological concepts to the development of performance appraisal systems in organizations. Topics include job analysis, cognitive processes in performance appraisal, types of rating scales, rater training methods, technical aspects of developing a performance appraisal system, performance feedback, individuals' reactions to performance feedback factors related to the perceived accuracy of performance feedback. Recommended prerequisites: Stat 243 and 244, Psy 321 and 360 or 361.

***Psy 440/540**

Group Process (4)

A course on the psychology of small groups. Topics will include but not be limited to: interpersonal attraction, stages of group development, group structure, coalition formation, personal power, leadership, group decision making and problem solving, intergroup relations and the principles of negotiation. Recommended prerequisite: Stat 243 and 244, Psy 321, graduate standing or consent of instructor.

***Psy 444/544**

Job Analysis (4)

Methods (e.g., interviews, surveys) used to collect information about jobs for use in human resource functions such as personnel recruitment and selection, training, performance appraisal, and compensation. Such information is also used to develop job descriptions and specifications. Course contains a community-based learning component. Students participate in a full job analysis including data collection, analysis, and interpretation. Recommended prerequisites: Stat 243 and 244; Psy 321 and 360 or 361; or comparable Business Administration courses.

***Psy 445/545**

Employee Development (4)

Covers the application of psychological principles to employee training and development. Topics include organization, job, and person analysis; program design; the application of learning principles to enhance training effectiveness; evaluation of training programs; and employee training and development methodology. A heavy emphasis is placed on current psychological research. This course may include a community-based learning component. Recommended prerequisites: Stat 243 and 244; Psy 321 and 360 or 361.

***Psy 447/547**

Personnel Psychology (4)

How individual differences affect work behavior and task performance and how psychologists measure and predict such differences. Covers the development, administration, and utility of modern instruments for selection and appraisal. Data combination strategies and decision making in personnel systems are discussed. Recommended prerequisites: Stat 243 and 244, Psy 321 and 360 or 361.

***Psy 448/548**

Psychology of Work Motivation (4)

Examination of the role that motivation plays in initiating, guiding, and maintaining work behaviors. Discussion of job attitudes, emotional intelligence, personality factors, socialization and culture, effects of participation, careers, job enrichment, re-engineering, and power and politics. Recommended prerequisite: Psy 321.

***Psy 449**

Survey of Human Factors (4)

An introduction to systems analysis concepts. An examination of the role of man and his interrelationships with complex man-machine systems. Topics include: man-machine systems, visual and auditory presentation of information, design of controls, layout of work places, effects of environment on human performance, and the physical limits of human performance. Recommended prerequisites: eight credits in psychology; Stat 243, 244, and Psy 321.

***Psy 451/551**

Physiological Psychology (4)

Anatomical and physiological properties of the nervous system in relation to fundamental concepts in psychology. The emphasis is on an overall view of neurophysiological properties relevant to psychological functions: sensation, perception, attention, learning, motivation, emotion, activation, and motor responses. Recommended prerequisites: Stat 243 and 244, Psy 321 plus either Psy 345, 346, 347, or 348.

Psy 454, 455

Experimental Psychology (5, 4)

Principles of experimental design, evaluation of research methods, formulation and testing of hypotheses using research procedures, use of statistical software for analyzing the research data, writing a research manuscript using APA form. Recommended prerequisites: at least 12 credits in psychology including Psy 321 and at least one of the following: Stat 243 and 244.

Psy 459/559

Infant Development (4)

Development of the individual from conception to age two. Theory and research pertaining to infant development. Recommended prerequisites: Stat 243 and 244; Psy 311 and Psy 321.

Psy 460/560

Child Psychology (4)

Development of the individual from conception through childhood. Theory and research pertaining to child development. Recommended prerequisite: Stat 243 and 244, Psy 311 and 321.

Psy 461/561

Psychology Of Adolescence And Early Maturity (4)

Development of the individual from puberty to early adulthood. Theory and research pertaining to adolescent development. Recommended prerequisites: Stat 243 and 244, Psy 311 and 321.

Psy 462/562

Psychology of Adult Development and Aging (4)

Development of the individual from early adulthood through old age. Theory and research focusing on adult development from a life-span perspective. Recommended prerequisites: Stat 243 and 244, Psy 311 and 321 plus one of the following: Psy 459, 460, or 461.

***Psy 464/564**

Developmental Psychopathology (4)

Study of the origins and course of individual patterns of behavioral adaptation and maladaptation. Application of developmental principles to an understanding of social, emotional, and conduct disorders of children and their outcome in adult life. Recommended prerequisites: Stat 243 and 244, Psy 321 and 434 plus 8 credits in courses numbered Psy 459-461.

***Psy 465/565**

Applied Developmental Psychology (4)

Theory, methods, and research in selected areas of applied developmental psychology. Recommended prerequisites: Stat 243 and 244, Psy 311 and 321 and consent of instructor.

***Psy 467/567**

Work and Family (4)

An examination of the effects of work on family, and family on work, in contemporary society. Includes study of dual-career and dual-work families, effects of maternal employment on children, impact of child care and elder care on the workplace, and parental leave and other workplace supports for families. Implications of research for social policy. Recommended prerequisites: Stat 243 and 244, Psy 311 and 321.

***Psy 468/568**

Social Development (4)

Development of individual's social relationships from infancy to adolescence. Theory and research pertaining to social development from

an interactional perspective. Recommended prerequisites: Stat 243 and 244, Psy 311 and 321 and one of the following: Psy 459, 460, 461, or 462.

***Psy 471/571**

Health Psychology (4)

Study of the social and psychological influences on how people stay well, why some people become ill, and how persons respond to illness. Particular attention to the stress process.

Recommended prerequisites: Stat 243 and 244, plus 12 credits in psychology, including Psy 321; Soc 200 may be substituted for 4 of these credits and PHE 223 may be substituted for 4 of these credits.

***Psy 478/578**

Leadership and Group Effectiveness (4)

Study of leadership in small groups with an emphasis on interpersonal influence processes. Leadership is viewed as statements or actions intended to influence a group's efforts toward goal setting and achievement. Includes discussion of leadership training/development, and self-awareness of style. Recommended prerequisite: Psy 321.

***Psy 479/579**

Women and Organizational Psychology (4)

Examines the relationship between gender and work in different kinds of organizations across the economy. Focus is on the ways that gender influences such experiences as stress, hiring and career development, leadership opportunity, group interactions and organizational relationships, and the ways the greater understanding of gender/work interactions can influence individual experience and result in strategies for change. Recommended prerequisites: Stat 243 and 244, Psy 310 and 321.

Psy 480/580, 481/581, 482/582
Community Psychology (4, 4, 4)

Applications of basic psychological knowledge and methods to community problems. Course includes identification of the psychological aspects of human problems in the community, the use of psychological procedures for evaluating the individual and the individual's psychological environment, and the search for techniques for promoting psychological change under these conditions. Field projects will include contact with community resources in the fields of health, education, and welfare such as poverty projects, mental health clinics, etc. Completion of Psy 480 is prerequisite for enrollment in Psy 481, and completion of Psy 481 is prerequisite for enrollment in Psy 482; all three must be taken during the same academic year. Psy 480, 481, 482 is a true sequence in which work in each succeeding course depends on work done in the preceding one. This includes practicum experience which culminates over a 9-month period covered by the three courses in sequence. Recommended prerequisite: Stat 243 and 244, Psy 321 and consent of instructor.

Psy 484/584

Principles of Behavior Modification (4)

A survey of recent developments in the application of behavior theory to problems of psychological adjustment. The course includes treatment of the behavioral concept of "abnormal," and the development of a technology of behav-

ior therapy. The course is intended for advanced students in psychology, social work, special education, speech pathology, and nursing. Recommended prerequisites: Stat 243 and 244; Psy 321, 340 or 346, 434.

Psy 485/585

Self-modification of Behavior (4)

The technology of self-change developed within the framework of behavior modification theory, including relevant ethical and theoretical issues, specific techniques of change and the application of these techniques within a systematic program development model. Recommended prerequisites: Stat 243 and 244, Psy 321, 340, 346 or 484.

***Psy 486/586**

Human Performance and Mental Workload (4)

Introduction to mathematical and conceptual theories of how the human performs simple and complicated tasks. Topics include signal detection theory, information theory, reaction time, attention, effort. Measures and theories of mental workload will be discussed as well as what leads to cognitive overload and how it can be altered. Recommended prerequisites: Psy 321, Stat 243 and 244, and 12 credits of psychology.

***Psy 487/587**

Life-span Development (4)

Theories and methodology for the study of processes and change in life-span developmental perspective. Practical implications of different perspectives for theories and research regarding human development. Recommended prerequisites: Stat 243 and 244, Psy 311 and 321 plus 8 credits in courses numbered Psy 459, 460, 461, or 462.

Psy 492/592

Decision Psychology (4)

Normative and descriptive models for structuring decision problems, evaluating consequences of alternative courses of action, thinking about probability and causation, and choosing among alternatives. Recommended prerequisites: Stat 243 and 244, Psy 321 and 348.

Psy 493/593

Decision Making Laboratory (4)

Practice in the use of judgment techniques and decision software to structure decision problems, evaluate alternative courses of action, perform sensitivity analyses, and prepare presentations. Wherever possible, practice will be on current decision problems in field settings. Recommended prerequisites: Psy 491/591, 492/592.

Psy 495/595

Psychological Test Construction (4)

Problems and methods in the construction of tests for the measurement of psychological variables. The issues of reliability, validity, item analysis, standardization will be studied. Students learn about the development of a psychological scale by participation in all facets of actual test construction. Recommended prerequisites: Stat 243 and 244, Psy 321 plus 12 additional credits of psychology.

***Psy 497/597**

Applied Survey Research (4)

Provides theoretical framework for and experience in design, execution, and interpretation of

social surveys including sampling procedures, questionnaire design, interviewing techniques, coding and computer analysis, and report writing. Recommended prerequisites: Stat 243 and 244, Psy 321.

***Psy 498/598**

Field Observation Methods (4)

Applied experience in the major methodological techniques of field observation, as well as the key problems of validity and reliability as they arise while developing a behavioral observation system. Recommended prerequisites: Stat 243 and 244, Psy 321, plus 12 upper-division credits in psychology.

Psy 503

Thesis (Credit to be arranged.)

Psy 514/614

Advanced Applied Social Psychology (4)

Theory, methods, and selected topics in advanced applied social psychology.

Psy 515/615

Advanced Applied Developmental Psychology (4)

Theory, methods, and selected topics in advanced applied developmental psychology.

Psy 516/616

Advanced Industrial/Organizational Psychology (4)

Theory, methods, and selected topics in industrial/organizational psychology.

Psy 517/617

Advanced Applied Experimental Psychology (4)

Theory, methods, and selected topics in advanced applied experimental psychology.

Psy 518/618

Ethics and Professional Issues in Applied Research and Practice (4)

Examines ethical issues of importance to applied psychologists with special attention to the use of human subjects in psychological research. Addresses ethical issues in professional relationships and in the teaching of psychology.

***Psy 519**

Field Experimental Methods (4)

Problems of designing an experimental investigation of psychological phenomena in a naturalistic field setting. Course requirements include the design of a realistic research proposal. Extensive use is made of instructor experience with field experimental studies in the field of mental health. Prerequisite: graduate status in psychology or urban studies.

***Psy 520**

Methods of Psychological Assessment (4)

Formulation of problems that can be answered by tests. Reliability, validity, and standardization of measurement, test fairness; methods of identifying assessment tools (tests, etc.) appropriate to specific testing or assessment problems are also considered. Prerequisite: Stat 243.

Psy 521/621

Univariate Quantitative Methods (5)

Survey of topics in univariate quantitative methods, including: graphical displays, descriptive statistics, statistical inference, group comparisons, analysis of variance for between group and factorial designs, correlation, regression, and analysis of association for categorical variables.

Psy 522/622**Multiple Regression and Multivariate Quantitative Methods (5)**

Exploration of statistical methods with several variables, including: simultaneous and hierarchical regression, discriminant analysis, multivariate analysis of variance, analysis of covariance, and logistic regression. SPSS will be used for conducting analyses and students will gain experience in writing journal quality results and discussion sections.

Psy 523/623**Factor Analysis and Covariance Structure Modeling (5)**

Introduction to factor analysis and covariance structure modeling, topics include common factor analysis, principal components analysis, confirmatory factor analysis, mediator models, moderator models, model modification, research issues in building and confirming models.

Psy 524/624**Research Design in Applied Psychology (4)**

Process of exploring how key social/community, organizational, and developmental concepts shape the conceptualization and design of research in applied psychology. Students conceptualize and construct three alternative study designs employing the relevant concepts. Explore basic design issues such as control, causation, confounding, contrasts, and threats to validity; measurement; and the use of key concepts such as organizational context, social interactions, dynamics, levels of analysis, and systems in psychological theory and research.

Psy 528/628*Seminar in Applied Developmental Psychology (4)**

Theory and research in selected topics in applied developmental psychology.

Psy 529/629*Psychological Issues in Later Life (4)**

Methodological, theoretical and empirical issues in research on psychology and aging. Topics include cognitive processes, family and caregiving relationships, environmental issues and psychological predictors of successful aging. Emphasis is on encouraging students to develop their own research project in the field of psychology of aging. Prerequisite: admission to a graduate program or Graduate Certificate in Gerontology program.

Psy 532/632*Clinical Interviewing (4)**

Introduction to principles and techniques of interviewing. Focus on clinical applications in organizational settings.

Psy 533/633*Contemporary Social Psychology (4)**

Current knowledge of social psychology presented with an emphasis on what the field can contribute to understanding contemporary social problems and issues. Major topics will

include the nature of social interaction, the relationship of attitude and behavior, and group processes. Areas of application will include social helping networks and the relationships of social psychology to law, health, and the environment. Prerequisite: admission to a graduate program in psychology, systems science, or urban affairs.

Psy 535/635*Psychological Consulting in Organizations (4)**

Psychologically-based theories and techniques aimed at the planned change of organizational work setting for the purpose of enhancing individual development and improving organizational performance. Issues in consultant-client relationships, specific change methods, and system ramifications of guided change using the action research model are integrated throughout the course.

Psy 537/637**Qualitative Research Methods in Psychology (4)**

Introduction to qualitative research methods in psychology. Covers epistemology, research design, data collection techniques, narrative analysis, computer-aided analysis of text, qualitative research ethics, and writing/reporting of research. Includes field research project in the community.

Psy 546/646**Personnel Selection (4)**

Technical and theoretical issues involved in selecting the appropriate worker to fit a job. Includes current research and theory in test development, test validation, selection methods, and criterion development. Heavy emphasis on psychological measurement (e.g., reliability and validity) and the legal issues involved in hiring and promoting employees. Prerequisite: admission to the psychology graduate program.

Psy 554/654*Social Psychology of Mental Health (4)**

Participants in this seminar will explore these questions: What are appropriate definitions of mental health and mental illness? How is psychological health related to subjective well-being? How do social structural, social role, interpersonal, and personality factors affect psychological health? How is mental health affected by the stress process? Prerequisite: graduate status.

Psy 561/661**Research in Applied Developmental Psychology (4)**

Conducted in collaboration with an approved faculty research mentor. Research areas may include prosocial, social, cognitive, and motivational development, attachment, peer groups, parenting, teaching, early literacy, identity, aging, coping, self-system processes, and the social and cross-cultural contexts of development, including the family, schools, and day

care. Involves data gathering, analysis, and/or reporting results of research conducted in a field setting. Emphasis on applied issues related to research design, data collection, data analysis, and scientific writing.

Psy 562/662**Research in Applied Social/Community Psychology (4)**

Conducted in collaboration with an approved faculty research mentor. Research areas may include social relationships and health behaviors; social relationships and subjective well-being; community-based interventions; self-help groups; social psychological perspectives on social movements; gender issues; family violence; and prevention. Involves data gathering, analysis, and/or reporting results of research conducted in a field setting. Emphasis on applied issues related to research design, data collection, data analysis, and scientific writing.

Psy 563/663**Research in I/O Psychology (4)**

Conducted in collaboration with an approved faculty research mentor. Research areas may include: personnel psychology; work motivation and leadership; training and development; organizational development and change; organizational behavior; and occupational health psychology. Involves data gathering, analysis, and/or reporting results of research conducted in a field setting. Emphasis on applied issues related to research design, data collection, data analysis, and scientific writing.

Psy 589/689**Adult Socialization (4)**

This course examines the acquisition of social roles in adulthood. Two themes prevail: stages of socialization; and levels of transmission of social norms (cultural, organizational, and interpersonal). Prerequisite: graduate status.

Psy 594**Mathematical Models in Psychology (4)**

Introduction to the use of probability theory and elementary functions in models for psychological processes: applications include decision analysis, psychophysics, and descriptive and theoretical applications of Markov chains in the study of learning and interpersonal interactions.

Psy 601**Research (Credit to be arranged.)**

Consent of instructor.

Psy 604**Internship (Credit to be arranged.)****Psy 605****Reading and Conference (Credit to be arranged.)**

Consent of instructor.

Psy 607**Seminar (Credit to be arranged.)**

Consent of instructor.

Psy 610**Selected Topics (Credit to be arranged.)**

Science Education

218 Science Building II
503-725-4243
www.cse.pdx.edu/

The mission of the Center for Science Education (CSE) is to enhance science teaching and learning through innovative education, research, and community outreach programs. The center provides undergraduate general education courses in the sciences for all majors, a Master of Science Teaching program, and professional development opportunities for existing science educators. The center also supports community partnerships that involve citizens and community institutions in activities that employ the inquiry practices of science. Through its programs, the center aims to help students and teachers raise their capacity to participate in the community as informed citizens.

The Center's community programs provide science education outreach services to teachers and students at the kindergarten through high school level. These programs include Cascade Earth Force, Teachers in the Woods, the Children's Clean Water Festival, the Horizons Project, the Northwest Science Exposition, and the Stewards of the Environment Conference. In addition, many CSE faculty partner with local schools, non-profits, and government agencies as part of their individual course offerings.

Undergraduate program

The center's undergraduate science course offerings are designed to introduce scientific methods to students of all majors. Many of these courses are integrated into the University Studies curriculum and satisfy the laboratory-based science course requirements for the PSU Bachelor of Science degree for nonmajors.

Graduate program

The College of Liberal Arts and Sciences offers the Master of Science in Teaching: Science degree (M.S.T.) in science/general science. The goal of this program is to advance the use and understanding of sci-

ence inquiry through an active research program. Graduate students work with faculty advisers to develop and carry out an assessment based research agenda. The program must include a minimum of 45 credits in approved graduate courses, to include a minimum of 24 credits in the area of concentration and at least 9, but no more than 15, education credits. As part of their degree requirements for the M.S.T. in general science, students will take:

	Credits
Sci 520, 521 Research Based Learning I and II	8
Sci 507 Seminar	3
Sci 503 Thesis or 506 Project	6

Students complete a project or thesis contingent on adviser's approval. In order to fulfill degree requirements, the student must satisfactorily complete the degree programs and pass their thesis defense or, if completing a project, give a final presentation and submit a final written paper, as specified by their adviser.

Courses

Courses with an asterisk (*) are not offered every year.

The Science in the Liberal Arts Curriculum contains three distinct types of courses: Natural Science Inquiry (NSI), Science Cornerstone (SC), and the Context of Science in Society (CSS). All the courses are designed as 4-credit hour courses for an academic calendar in the quarter system.

Sci 201 Natural Science Inquiry (4)

This is the University Studies Sophomore Inquiry course that serves as the gateway to the Science in the Liberal Arts curriculum. The course aims to introduce students to the knowledge-making strategies of science. The curriculum is taught using small group and class projects that engage students in various science inquiry activities. Students gain experience in gathering and understanding scientific information, data management, interpretation and presentation, making and defending knowledge claims, working collaboratively, writing technically, and communicating scientific results.

Sci 310-349 Science Cornerstone

These courses have embedded laboratory and/or field activities. The courses are designed for students who are not majoring in science and are seeking to meet the new laboratory-based science course requirements for the PSU Bachelor of Science degree. These

courses will simultaneously meet course cluster requirements in the University Studies Program. The Science Cornerstone courses are interdisciplinary and thematic in nature. They engage students in experiential explorations of timely topics in science. Students participate in knowledge-making activities using appropriate scientific methodologies to construct a functional understanding of how knowledge is made in the subject area of the course. The prerequisite course for Science Cornerstone courses is Sci 201 Natural Science Inquiry or consent of the instructor:

*Sci 311, 312 Teaching Everyday Science (4, 4)

Two-term sequence designed to immerse potential mathematics and science teachers in laboratory and thinking experiences that they can use as a foundation for their own understanding of the physical sciences and related mathematics and curriculum development in future teaching experiences. In addition to experiences in the laboratory, environmental impact issues will be investigated. Includes laboratory and/or fieldwork. Recommended prerequisite: Natural Science Inquiry.

Sci 313 Environmental Mathematical Modeling (4)

An introduction to differential and integral calculus, this course is intuitive in approach and emphasizes applications, especially with respect to environmental issues. The interested student may follow it with a more extensive and rigorous calculus sequence. Includes laboratory and/or fieldwork. Recommended prerequisites: Natural Science Inquiry, Mth 111.

Sci 314 Environmental Statistics (4)

Explores a selection of mathematical topics in the context of environmental issues, using real data. Topics will include statistics, data display, data analysis, probability, and probability distributions. Includes laboratory and/or fieldwork. Recommended prerequisites: Natural Science Inquiry, Mth 95.

Sci 315, 316 General Astronomy (4, 4)

Introductory historical, descriptive, and interpretive study of astronomy. Emphasis is on the basic scientific methods as they apply to astronomical problems. Detailed examination of the earth, followed by a survey of the other members of the solar system. Survey of the stars, their types, grouping, and motions. Models for the evolution of the Universe and the possibility of life elsewhere. The nature of light, the types of information it carries, and the types of devices used to detect it. Includes laboratory and/or fieldwork. Recommended prerequisite: Natural Science Inquiry. Taught by a faculty member from the Department of Physics.

Sci 317*Fractals, Chaos, and Complexity (4)**

Introduction to the physics of fractals in nature, chaos, and complexity. Computer simulations and desktop experiments involving fractals, chaos, and complex systems. Recommended prerequisite: Natural Science Inquiry. Taught by a faculty member from the Department of Physics.

Sci 318**Complexity and the Universe I (4)**

Introduction to the physics of complexity and other current concepts in physics. Computer simulations and desktop experiments involving fractals, chaos, and complex systems. Includes laboratory and/or fieldwork. Recommended prerequisite: Natural Science Inquiry. Taught by a faculty member from the Department of Physics.

Sci 319**Complexity and the Universe II (4)**

Continuation of Sci 318/Ph 366. Emphasizes scientific cosmology with a focus on understanding how insights gained from physics and astronomy affect your view of the universe and your place in it. Students participate actively in seeing how some of the information was gathered, help critically analyze what to believe about the history and arrangement of the universe and what it means to them. Includes laboratory and/or fieldwork. Recommended prerequisite: Natural Science Inquiry. Taught by a faculty member from the Department of Physics.

Sci 320**Rates of Change (4)**

Explores rates of change in a laboratory-style format. Analyzes the relationships between quantities and rates using hand-drawn and computer-generated graphic representations. Provides resources for pre-service teachers.

Sci 321, 322*Energy and Society (4, 4)**

Study of the generation and usage of energy, including the technical, economic, social, and political issues related to energy production and end uses. Examination of energy resources, methods of producing and converting various forms of energy, energy conservation, and environmental and economic implications of energy production and energy policies. Includes laboratory and possibly fieldwork. Recommended prerequisite: Natural Science Inquiry.

Sci 323, 324*Materials for the 21st Century (4, 4)**

Study of the structure and function, in particular the correlation between structure and function, of inorganic, organic, and biological materials, especially those related to economically and technologically important processes, such as electronics, optics, energy, sensors, and synthetic biomaterials. This course is designed with the non-science major in mind and will continually focus on how materials affect our lives as citizens, consumers, and family members. Includes laboratory and fieldwork. Recommended prerequisite: Natural Science Inquiry.

Sci 325**Science of a Hydrogen Economy (4)**

Hydrogen is considered as an ideal energy source. Explores various methods of hydrogen production, storage, delivery, and uses. Includes discussion of hydrogen's image as an abundant, clean, high energy output, easily obtainable, safe energy source. Considers safety issues and

codes/standards from various related agencies and organizations that would have been necessary to have avoided such historical mishaps as those involving the Hindenberg and the space shuttle Challenger. Recommended prerequisite: Natural Science Inquiry.

Sci 331, 332*AI: Urban Air Pollution (4, 4)**

Interaction of the atmosphere with other earth systems, chemical cycling, and the effect of humans on the atmosphere will be explored. The physical and chemical properties and interactions of the atmosphere will be investigated through laboratory investigations, fieldwork, and computer modeling. Topics will include urban air quality, global climate change, and the "management" of the atmosphere. Includes laboratory and/or fieldwork. Recommended prerequisite: Natural Science Inquiry.

Sci 333*Climate and Water Resources (4)**

An inquiry-based examination of the principal controls on climate and hydrology, with emphasis on processes and interactions; students will do fieldwork, data analysis, and laboratory work. Recommended prerequisite: Natural Science Inquiry. Also listed as Geog 310; course may be taken only once for credit.

Sci 334*Climate Variability (4)**

Examines the role of climate variability in the Pacific Northwest, including the nature of natural and human-induced variability and the effects on water resources of the region. Students will learn by gathering data, analyzing the data, and reporting on their results. Reading and discussion will accompany the data/laboratory portions of the course. Includes laboratory and/or fieldwork. Recommended prerequisite: Natural Science Inquiry. Also listed as Geog 312; course may be taken only once for credit.

Sci 335, 336**Water in the Environment (4, 4)**

Studies of the unique properties of water in all of its roles, including a study of the water cycle, water resources, treatment of municipal water, and wastewater treatment. Special attention will be placed on natural waters as a resource, including natural and introduced constituents and the movements of natural waters. Includes laboratory and fieldwork. Recommended prerequisite: Natural Science Inquiry.

Sci 338**Investigating Forest Ecosystems (4)**

Fundamental concepts of terrestrial ecology in the context of present unresolved forest management issues. Participants will learn an appropriate set of field skills in soil and vegetation monitoring and engage in a short-term research project at a local site. Socio-political context of Pacific Northwest forest management will be covered through guided controversies and guest speakers. Prerequisite: one ecology or environmental science course.

Sci 341, 342*Biology Concepts and Applications (4, 4)**

Two-term course focusing on four main topics: classical Mendelian and current molecular genetics, evolution and predator/prey interactions, growth and metabolism, and biomes and biodiversity. In each topic area students will participate in laboratory and/or field compo-

nents, discussion, and Internet exercises. Includes laboratory and/or fieldwork. Recommended prerequisite: Natural Science Inquiry.

Sci 343, 344*Columbia Basin Plant Communities (4, 4)**

In this two-term course students will explore the relationships found in alpine, desert, forest, and grassland plant communities. They will gain an understanding of how these plant communities interact with their environment and why they exhibit certain characteristics and processes. Includes laboratory and fieldwork. Recommended prerequisite: Natural Science Inquiry.

Sci 345, 346**Old Growth Forest Ecology and Management (4, 4)**

Explores the ecological characteristics of old-growth forests, including the outstanding biodiversity that exists at multiple levels, as well as the management paradigms that have impacted these systems in the Pacific Northwest (U.S. and Canada), including ethical, social, economic, and political aspects of forest management. Sci 345 includes laboratory and local fieldwork plus projects involving: analysis of environmental impact statement alternatives, evaluation of management issues, and advisory statements for governmental activities. Sci 346 involves more extensive fieldwork, data analysis, and presentations. Recommended prerequisite: Natural Science Inquiry.

Sci 347, 348**Science, Gender, and Social Context (4, 4)**

Two-term course explores the strengths and limitations of science to describe and predict nature through laboratory and field investigations. These activities will illustrate the transition from a reductionist view of our natural environment to a systems-oriented view. It will place this historical shift in understanding and scientific practice in the contexts of gender, race, and class using selected case studies in environmental management. Includes laboratory and/or fieldwork. Recommended prerequisite: Natural Science Inquiry.

Sci 350-379 Context of Science in Society

These courses address the promises and limitations of the scientific enterprise in the framework of "real world" social, economic, political, and ethical issues. Courses also address the historical and cultural role of science and technology, providing a link between laboratory science and contemporary society. Some CSS courses introduce risk-benefit analyses and decision-making methodologies. The prerequisite course for Context of Science in Society courses is Sci 201 Natural Science Inquiry or consent of the instructor.

Sci 351**Northwest Wetlands: Conservation, Restoration, and Mitigation (4)**

Focus on science and public policy issues in wetland conservation, restoration, and mitigation, especially in Oregon and the Pacific Northwest. Recommended prerequisite: Natural Science Inquiry or consent of instructor.

Sci 352*Science and Policy of Climate Change (4)**

Evaluates the scientific data and the policy statements concerning the potential for human impact of climate, and in particular the questions of the existence and impacts of global warming. The interaction between scientific analysis and policy analysis will be explored, and students will consider the roles that citizens, scientists, and policy make in developing local, regional, and global responses to climate change. Recommended prerequisite: Natural Science Inquiry.

Sci 353*Radiation in the Environment (4)**

Examines various sources of radiation and the hazards they represent. Students will consider the interaction of radiation with matter, especially living tissue, and an examination of "safe" dosage estimates and health risks. The science and policy of nuclear power generation and the problems of nuclear waste disposal will be considered. Recommended prerequisite: Natural Science Inquiry. Also listed as Ph 353; course may be taken only once for credit.

Sci 355**Science Through Science Fiction (4)**

This class uses science fiction literature to examine a wide variety of topics in science. Recommended prerequisite: Natural Science Inquiry. Also listed as Ph 378; course may be taken only once for credit.

Sci 356**Concepts of Global Environmental Sustainability (4)**

Environmental sustainability explored through a variety of international case studies. Focus on role of cultural, economic and political conditions—e.g., global trade agreements, global environmental agreements, and aid and development structures—in shaping decision-making around environmental sustainability.

Sci 357**Sustainability in the United States-Mexico Border Region (4)**

Explores environmental and economic sustainability issues at the United States-Mexico border. Dialogue with United States and Mexican border residents; tours of immigration facilities and multinational factories; homestays with working class families; and service with Mexican-based agencies. Spanish language skills not required.

Sci 359*Biopolitics (4)**

Designed to introduce the ethical, social, and political implications of knowledge and technologies attending advances in reproductive medicine and molecular genetics, including: in vitro fertilization, fetal surgery, and somatic cell gene therapy. Particular attention is paid to the manner in which such advances are likely to affect women's lives. Recommended prerequisite: Natural Science Inquiry.

Sci 361*Science: Power-Knowledge (4)**

Systematically examines orthodox portrayals of science in comparison to recent anthropological, feminist, and poststructuralist accounts in an attempt to formulate a fresh understanding of the public's science literacy as a critical component of democratic political practice and civic responsibility. Recommended prerequisite: Natural Science Inquiry.

Sci 363*Ethics in Science (4)**

Explores what it means for the institution of science as well as for individual scientists to be ethical and to attend to questions of social, political, and moral value in their doing of science. It will address the question of how scientists are to deal with the consequences of their research. Recommended prerequisite: Natural Science Inquiry.

Sci 365**The Science of Women's Bodies (4)**

The female human body is studied from a multidisciplinary perspective including anatomy, physiology, genetics, cell biology, endocrinology and human development, as well as biochemistry. Current social, cultural and political topics related to the science and policy of women's health are also discussed. This course is the same as WS 365; may only be taken once for credit.

Sci 399**Special Studies (Credit to be arranged.)****Sci 401/501****Research (Credit to be arranged.)****Sci 402/502****Independent Study (Credit to be arranged.)****Sci 404/504****Cooperative Education/Internship (Credit to be arranged.)****Sci 405/505****Reading and Conference (Credit to be arranged.)****Sci 407/507****Seminar (Credit to be arranged.)****Sci 409/509****Practicum (Credit to be arranged.)****Sci 410/510****Selected Topics (Credit to be arranged.)****Sci 503****Thesis (Credit to be arranged.)****Sci 808, 810****Professional Development Courses**

CSE offers a number of credit-based professional development opportunities for existing science teachers. These courses are taught by CSE faculty and community partners and cover a wide range of environmental and science education topics. Credits earned through these courses do not fulfill graduate program credit requirements. For more information about these courses, contact the Center for Science Education at 503-725-4243.

Sociology

217 Cramer Hall

503-725-3926

www.clas.pdx.edu/sociology/

B.A., B.S.

Minor

Secondary Education Program—Social Science

M.A., M.S.

M.A.T. and M.S.T. (General Social Science)

Ph.D. in Systems Science—Sociology

Ph.D.—Participating department in Urban Studies Doctoral Program

Undergraduate programs

Sociology is the study of society and human interaction. Sociologists examine

groups of as small as two or as large as billions. From the smallest friendship or family group to the great global web of human activity, sociologists analyze and interpret our world.

Sociologists use many theoretical approaches, data, and research techniques. Information comes from many sources including surveys, historical documents, census data, intensive interviews, and participant observation. This information is analyzed and used to explain phenomena such as power relations, beliefs and value systems, organizations, and the larger structure of society.

Sociology provides valuable tools for thought and a strong foundation for careers in many fields including education, business, journalism, government, and social service. A major in sociology prepares stu-

dents for graduate programs leading to careers in research, public service, and higher education. Sociological knowledge helps create informed and thoughtful citizens.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. In addition to meeting the general University degree requirements, the sociology major is required to take a minimum of 49 credits in sociology courses (including 20 credits in electives in the field) and the mathematics course in statistical methods.

	Credits
Soc 200 Introduction to Sociology.....	4
Soc 300 Sociological Inquiry.....	4
Soc 310 U.S. Society.....	4
Soc 320 Globalization.....	4
Soc 397 Social Research Methods.....	5
Soc 398 Sociology Research Project.....	4
Soc 470 Foundations of Sociology.....	4
Sociology electives, including at least 12 credits in 400-level courses.....	20
Subtotal	49
Stat 243 Introduction to Probability and Statistics.....	4
Total	53

Up to 10 credits of electives taken under the undifferentiated grading option (pass/no pass) in 200- or 300-level sociology courses can be applied toward fulfilling departmental major requirements. Differentiated grades of C or above are required for all other sociology courses and for Stat 243. A student must pass Soc 300 with a grade of C or better before taking other required courses as a sociology major.

Requirements for minor. To earn a minor in sociology a student must complete 28 credits (16 credits of which must be taken in residence at PSU, and 16 credits of which must be upper-division), to include the following:

Soc 200 Introduction to Sociology.....	4
Upper-division sociology credits, 12 credits of which must be numbered 411 through 499, inclusive.....	24
Total	28

Up to 10 credits taken under the undifferentiated grading option (pass/no pass) can be applied toward fulfilling departmental minor requirements.

SECONDARY EDUCATION PROGRAM

Adviser: **M. Toth**

(See General Studies: Social Science page 142)

Graduate programs

The department offers graduate work leading to the degrees of Master of Arts and Master of Science in sociology, and for students pursuing graduate work in education, the degrees of Master of Arts in Teaching and Master of Science in Teaching (General Social Science).

The Department of Sociology participates in the Systems Science Doctoral Program, offering a Ph.D. in Systems Science-Sociology. The Systems Science-Sociology Doctoral Program allows students to receive a Ph.D. with emphasis in the areas of social organization, social psychology, and social change with a systems approach.

Admissions requirements

Master of Arts or Master of Science.

Students must be admitted to the master's program by the department and by the University. Admission ordinarily is granted only to those students beginning the program in the Fall term. Students are expected to move through the core courses as a cohort and work together with the faculty in a team environment.

In addition to the general University admission requirements for advanced degrees, the applicant for a sociology master's degree program must have the following materials sent to the department:

- ◆ Three letters of recommendation from persons familiar with the applicant's academic performance.
- ◆ A complete set of transcripts of college and university work.
- ◆ Graduate Record Examination scores (Aptitude sections).
- ◆ A letter of application describing his or her sociological interests.

Applicants are normally expected to have a bachelor's degree in Sociology. Students with other undergraduate majors may be accepted, however, if they have completed courses in sociological theory, research methods, and statistics, or their equivalents.

Doctor of Philosophy. Admission to doctoral programs is independent of admission to any master's program within the department. For further details contact the respective program directly.

Degree requirements

University master's degree requirements are listed on page 70. Specific departmental requirements are listed below.

Master of Arts or Master of Science.

The candidate must complete a minimum of 55 graduate credits, including 26 credits in core sociology courses, 20 credits of electives (12 of which may be in departments other than sociology), and 9 credits of thesis. Elective courses outside sociology must be approved by the student's adviser. The student must pass an oral defense of the thesis.

Students working for the Master of Arts degree must satisfy the language requirement.

	Credits
Core	
Soc 590 Social Research Strategies.....	4
Soc 591 Theoretical Perspectives.....	4
Soc 592 Qualitative Methods.....	4
Soc 593 Quantitative Methods.....	4
Soc 594 Theory Construction and Research.....	4
Soc 595 Research Practicum.....	4
Soc 513 Thesis Workshop (course must be taken twice).....	2

Thesis

Soc 503 Thesis (completed over three terms).....9

Electives

Two 500-level sociology course.....8
Sociology or other department†.....12

Master of Arts in Teaching or Master of Science in Teaching. For information on the Master of Arts in Teaching and the Master of Science in Teaching (General Social Science), see page 144.

Doctor of Philosophy. For more information relative to the Ph.D. program in Systems Science-Sociology, see page 75. In addition, the Department of Sociology is one of five departments offering courses in areas of specialization available within the Urban Studies Doctoral Program. Courses in sociological theory and methods, and a pattern of sociology courses relevant to the study of urban life, when combined with urban studies seminars, may serve as one of the fields of specialization for the Ph.D. in urban studies. For information relative to the Ph.D. in urban studies, see page 309.

Courses

Courses with an asterisk (*) are not offered every year.

Soc 199 Special Studies (Credit to be arranged.)

Recommended prerequisite: consent of instructor. Maximum: 8 credits.

Soc 200 Introduction to Sociology (4)

Sociological concepts and perspectives concerning human groups; includes attention to socialization, culture, institutions, stratification, and societies. Consideration of fundamental concepts and research methodology.

Soc 299 Special Studies (Credit to be arranged.)

Soc 300 Sociological Inquiry (4)

Exploration of the linkage between theoretical foundations of sociology and the conduct of sociological research. Focus is on fundamental methodological issues utilized in exemplar research studies conducted under different theoretical perspectives. Recommended prerequisite: Soc 200.

Soc 310 U.S. Society (4)

Examination of the social structure, culture, and demography of the United States. Sociological approaches to such institutions as the economy, religion, education, and the family are explored. Attention given to comparison with other industrialized countries as well as to selected social issues and controversies. Recommended prerequisite: Soc 200, 300.

Soc 320 Globalization (4)

Exploration of issues and approaches in sociological thinking relative to world systems. World systems are treated not only as world orders made up of political and economic exchanges, but also as cultural orders and institutionalized structures transcending national geographic boundaries. Attention given to the international, national, regional, and local ways

† Elective courses outside sociology must be approved by the student's adviser

that people attempt to deal with the instabilities accompanying globalization. Recommended prerequisite: Soc 200, 300.

Soc 337
Minorities (4)

Description and analysis of problems involving specific minorities, with major emphasis on American society. Although racial and ethnic groups are usually emphasized, the term "minorities" is broadly defined to include such subordinate-status groups as women, the aged, and religious and cultural minorities.

Soc 339
Marriage and Intimacy (4)

The sociological and social psychological dimensions of courtship, marriage, and the family. Perspectives on the effects of social environment and transitions in the structure and functions of intimacy, courtship, marriage, and the family. The influence of society and community upon intimate relationships.

Soc 341
Population Trends and Policy (4)

Introduction to the general field of population analysis; a review of the development of population theories, techniques of measurement and analysis of the basic demographic variables, their interrelationships, and population changes. Recommended prerequisites: Soc 200.

Soc 342, 343
Social Psychology (4, 4)

Analysis of the psychological and sociological processes in personality formation and in various forms of group behavior. Particular attention to social cognition, roles, and to group origins, functions, ideology, membership, and leadership. Recommended prerequisites: Soc 200 or Psy 200, 204. Soc 342 is prerequisite for Soc 343. Credit will not be given for both Soc 342 and Psy 342, or for both Soc 343 and Psy 343.

Soc 344
Gender and Sexualities (4)

Examines the ways in which social constructions of gender both influence and are influenced by the cultural organization of and individual expressions of sexuality. The course explores the intersections among sexuality, culture, gender, and the body and examines a variety of sexualities and emphasizes the multifaceted nature of power, privilege, and oppression.

Soc 350
The United States in Comparative Perspective (4)

Comparative analysis of how institutions such as schools, families, and firms shape the choices and life chances of individuals in the United States, Japan, and Europe with emphasis on the ways that these structures facilitate equality and democracy. Prerequisite: Soc 200.

Soc 370
Sociology of Deviancy (4)

Introduction and analysis of deviant behavior. Delineation of the sociological and social psychological factors which give rise to deviant roles. Recommended prerequisites: Soc 200.

Soc 376
Social Change (4)

Deals with the technological and ideological factors which govern the evolution and transformation of society, with special emphasis on the operation of such factors since 1800. Recommended prerequisites: Soc 200.

Soc 397
Social Research Methods (5)

Study of the structuring of sociological inquiry, conceptualization and measurement, operationalization, computers in social research, analysis of bivariate and multivariate relations, the logic of sampling and inference. Course includes lecture (4 hours per week) and an introductory research laboratory (2 hours per week). Recommended prerequisites: Stat 243, Soc 200, 300.

Soc 398
Sociology Research Project (4)

Development and execution of a research project integrating some aspect of sociological theory with social science research methodology. Students work in teams to identify a research problem, design and conduct research bearing on this problem, and write a research report. Soc 397 and 398 are to be taken as a two-term sequence.

Soc 399
Special Studies (Credit to be arranged.)

Soc 401/501
Research (Credit to be arranged.)

Consent of instructor.

Soc 404/504
Cooperative Education/Internship (Credit to be arranged.)

Soc 405/505
Reading and Conference (Credit to be arranged.)

Consent of instructor.

Soc 407/507
Seminar (Credit to be arranged.)

Consent of instructor.

Soc 410/510
Selected Topics (Credit to be arranged.)

Maximum: 12 credits. Consent of instructor.

Soc 414/514
Alcohol and Other Drugs (4)

Sociological analysis of the behavior and belief patterns relative to alcohol and other drugs in American society, with lesser attention to other societies. Prevention and intervention strategies are briefly reviewed. Recommended prerequisites: Soc 200.

Soc 418/518
Criminology and Delinquency (4)

Social and legal meaning of crime and delinquency explored. Historical and contemporary theories of causes of law breaking reviewed. Social and cultural factors promoting and inhibiting law breaking by juveniles and adults are examined. Attention given to strategies of prevention and control. Recommended prerequisites: Soc 200.

Soc 420/520
Urbanization and Community (4)

Analytical approach to the meaning of community in the modern world. The determinants, social consequences of, and responses to the processes of urbanization are considered. Theories of the city emphasizing ecological, sociocultural, and critical explanations for growth and change in urban regions are examined. Patterns of social and structural organization of the metropolis and the cognitive and behavioral aspects of urban life are explored. Recommended prerequisite: Soc 200.

Soc 423/523
Stratification (4)

Survey and analysis of stratification theories and empirical research. Analysis of class, race, eth-

nicity, gender, and sexual orientation, considering economic, social, political, and cultural dimensions of power. Recommended prerequisite: Soc 200.

Soc 424/524
Groups, Interaction and Identity (4)

Analysis of the formation and functioning of intergroup and intragroup relations. Attention to group organization and interaction, performance, cooperation, conflict, and group membership and individual identity. Recommended prerequisites: Soc 200, Soc or Psy 342.

Soc 425/525
Sociology of Women (4)

Analysis of the social position of women in the U.S. in institutional areas such as family, reproduction, politics, work, and education. Consideration and evaluation of feminist theories concerning social condition, behaviors, and characteristics of women. Recommended prerequisite: Soc 200.

Soc 426/526
Women and Mental Illness (4)

Social and historical evolution of images and explanations of madness in women. Contemporary distributions, diagnoses, and treatments of mental illness in diverse groups of women are examined. Focus on psychiatric disorder and gender-based discourse. Recommended prerequisite: Soc 200. Also listed as WS 426; course may be taken only once for credit.

Soc 430/530
Hate Crimes (4)

Hate crimes as a social issue. Central themes: the role that gender plays in the commission and awareness of hate crimes and the mainstreaming of bias crimes and the ideology behind them. Includes analysis of propaganda and coded language in the popular media and the Internet, analysis of the grass-roots response in the popular media, and evaluation of their effectiveness. Prerequisite: Soc 200.

Soc 436/536
Social Movements (4)

Formation, dynamics, and outcomes of social movements. Examination of the effects of circumstances, strategies, and alliances on the outcomes of social movements, including their impact on politics and society. Recommended prerequisite: Soc 200.

Soc 441/541
Population and Society (4)

Survey and analysis of population dynamics (births, deaths, migration) and society. Examination of demographic concepts, theories, data and measurements, and research. Role of population processes on social life and public policies are highlighted, including population aging, economic development and the environment, urbanization, health and health care, race and ethnicity, and government/social/business planning. Prerequisite: Soc 200. This course is the same as USP 419/519; course may be taken only once for credit.

Soc 444/544
Race, Ethnicity, and Nationality (4)

Analysis of the emergence, persistence and meaning of definitions of racial, ethnic and national statuses in selected areas of the modern world. Consideration of the consequences of changing definitions for intergroup and global relations. Recommended prerequisite: Soc 200.

Soc 457/557*Complex Organizations (4)**

Examination of complex organizations both as formal structures and as cultural systems. Analysis of the relations between organizations and individuals of inter-organizational dynamics and of the rationalization of modern societies. Recommended prerequisite: Soc 200.

Soc 459/559**Sociology of Health and Medicine (4)**

The application of sociology to the field of health and medicine. Attention given to a consideration of the broader questions of health in modern society, including the role of the medical practitioner in modern society, social factors and disease and responses to illness. The social organization of medicine is examined within the context of the larger medical care system. Recommended prerequisite: Soc 200.

Soc 460/560**Youth Subcultures (4)**

Youth as crisis and in crisis. Focus on methodology, ethnomethodology, and field experience; students will create ethnographs. Examination of the science of semiotics to understand sub-cultural style as language. Prerequisite: Soc 200.

Soc 461/561**Sociology of the Family (4)**

Sociological analysis of the structure and functions of the family institution and its relationship to external systems such as the economy and polity. Changing and diverse forms of family organization in urban society. Analysis of role relations in the family. Recommended prerequisite: Soc 200.

Soc 465/565**Environmental Sociology (4)**

Survey and analysis of the types of social forces which frame the nature of environmental problems concerning natural resource use and distribution as they emerge in public consciousness within the United States and globally. Examination of the social forces which lead to the consideration and implementation of mechanisms to solve these issues once they have emerged.

Soc 468*Political Sociology (4)**

Analysis of consensus and dissensus in community and society. Examination of public opinion, authority, influence, and the processes by which elites are formed and acquire legitimacy and popular support. Social bases of democracy and totalitarianism. Recommended prerequisite: Soc 200.

Soc 469/569**Sociology of Aging (4)**

A study of social determinants of the human life course, including biological and demographic conditions, age status patterns, age grading, rites of passage, socialization, generational phenomena, and youth and old age movements. Recommended prerequisite: Soc 200.

Soc 470**Foundations of Sociology (4)**

Examination and comparison of modes of sociological thinking, from the emergence of a distinctive sociological perspective through the development of symbolic interactionism. Recommended prerequisite: Soc 200, 300.

Soc 472/572*Contemporary Sociological Theory (4)**

Study of various frames of reference in contemporary sociological theory. Specific topics vary with instructor. Recommended prerequisites: Soc 200, 300; senior standing.

Soc 480/580*Sociology of Religion (4)**

Analysis of the nature of the sacred; attitudes toward the sacred in contrast to the secular. Comparison of the social organization of sect and church in their relation to the larger society. Survey of recent empirical studies of religiosity and religious practices in America. New trends in American religion. Recommended prerequisite: Soc 200.

Soc 483/583*Sociology of the Middle East (4)**

This course will examine the sociological development of the modern Middle East. It will especially focus on causes and consequences of rapid social change, including revolutions, coups, and insurgent movements. It will examine the role of Islam and tribalism in these movements. Recommended prerequisite: Soc 200.

Soc 497/597*Applied Survey Research (4)**

Provides theoretical framework for and experience in design, execution, and interpretation of social surveys including sampling procedures, questionnaire design, interviewing techniques, coding and computer analysis, and report writing. Recommended prerequisites: Stat 243 and Soc 395 or equivalent.

Soc 503**Thesis (Credit to be arranged.)**

Pass/no pass option.

Soc 513**Thesis Workshop (1)**

Workshop for all sociology graduate students who are currently enrolled in Soc 503 for four credits or more. Discussion and review of students' progress and problems. Recommended prerequisite: graduate status in sociology. Corequisite: Soc 503. Pass/no pass only.

Soc 576*Theories of Social Change (4)**

A critical examination of the major theories of social change. Analysis of the components of change; cause, agents, targets, channels, and strategies. Consideration of the relationship between change and power, influence, planning and control, modernization, development, and world systems approaches. Recommended prerequisite: graduate status.

Soc 577*Topics in Contemporary Theory (4)**

Exploration of theoretical approaches and issues of emerging interest in sociology, such as conceptualization of social systems, conflict, the problems of relativity, and ideology. Specific topics vary with instructor. Recommended prerequisite: Soc 470 and graduate status.

Soc 585/685**Medical Sociology (4)**

Seminar in medical sociology. Topics include how social stratification affects health outcomes, environmental hazards, social construction of medical knowledge, health care occupations, U.S. health policy, privatization of medical industries, and comparative health care systems. Recommended prerequisite: Soc 459/559 or consent of instructor.

Soc 586/686**Topics in Health and Inequality (4)**

Seminar focusing on the impact of race, class, and/or gender on health and health care. Topics may include medicalization of women's bodies, the social consequences of disparities, and current public policy debates about reducing disparities. Recommended prerequisite: Soc 459/559.

rent public policy debates about reducing disparities. Recommended prerequisite: Soc 459/559.

Soc 587/687**Comparative Health and Welfare Systems (4)**

Explores the sociology of health and inequality by comparing domestic and international social institutions and health care systems. Prerequisite: Soc 586/686.

Soc 590**Social Research Strategies (4)**

Consideration of the nature of sociological knowledge; elements of social research design; methods of observation and data collection; reliability and validity of information; techniques of data analysis. Recommended prerequisite: graduate status.

Soc 591**Theoretical Perspectives in Sociology (4)**

Analysis of the major contemporary theories in sociology. Attention to the problems of order and change, and power and inequality, as well as to the micro/macro problem in sociological theory. Recommended prerequisite: Soc 470 and graduate status.

Soc 592**Qualitative Methods (4)**

Strategies for acquisition and analysis of data using such approaches as participant observation, content analysis, field and case studies. Attention to the special problems of validity and reliability in such research. Consideration of ethical issues and researcher responsibility in qualitative research. Recommended prerequisite: graduate status.

Soc 593**Quantitative Methods (4)**

The application of quantitative methodology to sociological problems. Topics include: science and logical empiricism; measurement of association; procedures of statistical inference; multivariate and log linear analysis; computer application for social research. Recommended prerequisites: Stat 243, Soc 395, 495, graduate status.

Soc 594**Theory Construction and Research (4)**

Examination of the craft of sociological research in conjunction with thesis work. The role of theory in research, evaluating published work, biases in data sources and the process of thesis writing. Recommended prerequisites: Soc 590, 591; graduate status.

Soc 595**Research Practicum (4)**

Overview of the process of linking sociological data and ideas to broader communities of interest. Exercises in preparation of research grants and experience in working in a team research environment. Recommended prerequisites: Soc 590, 591; graduate status.

Soc 695**Advanced Methods in Sociology (4)**

Introduces a range of advanced quantitative methods commonly found in published research in sociology. Particular attention will be paid to the techniques commonly used to address the most common shortcomings of sociological data, including estimation of multivariate models with categorical dependent variables (i.e. logistic regression) and to nonparametric methods for analyzing data. Prerequisites: Soc 585/685, Soc 593 and Stat 543 or equivalent.

Speech and Hearing Sciences

85 Neuberger Hall
503-725-3533
www.sphr.pdx.edu

B.A., B.S.
Minor
Special Education Program
M.A., M.S.

The Department of Speech and Hearing Sciences offers courses and clinical experiences designed to meet the needs of individuals pursuing careers in speech-language pathology and audiology. Advanced degree holders in these fields provide services to people with speech, language or hearing problems in settings such as hospitals, elementary and secondary schools, community clinics, senior care centers, and private practices. The department offers a pre-professional, undergraduate program in speech-language pathology and audiology as well as a master's degree program in speech-language pathology. The master's degree program is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (ASHA). The department also offers a program leading to the Oregon Education Initial License in Communication Disorders.

Undergraduate programs

The undergraduate program leads to a B.S. or B.A. in speech and hearing sciences. The program is primarily designed to prepare the student for graduate work in speech-language pathology and audiology. It includes courses in normative, developmental, and pathological aspects of speech, hearing, and language, and offers clinical practicum opportunities. Courses in the undergraduate program may also be taken by students earning College of Liberal Arts and Sciences degrees who are not pursuing careers in speech-language pathology and audiology.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. In addition to meeting the general University degree requirements, the speech and hearing sciences major must meet the minimum departmental requirements as follows:

SpHr 262 Voice and Diction (4)
SpHr 370 Phonetics and Acoustics (4)
SpHr 371 Anatomy and Physiology of Speech and Hearing (4)
SpHr 372 Speech and Language Development in Children (4)
SpHr 380 Language Disorders in Children (4)
SpHr 389 Sign Language: Theory and Practice (4)
SpHr 461/561 Neurology of Speech and Hearing (4)
SpHr 464/564 Articulation/Phonological Disorders (4)
SpHr 487/587 Basic Audiology (4)
SpHr 488/588 Advanced Audiology (4)
SpHr 489/589 Aural Rehabilitation (4)
SpHr 495/595 Organic Communication Disorders (4)
SpHr 496/596 Introduction to Clinical Management (4)

Credits

Graduate program

The department offers a program leading to the Master of Arts and Master of Science degrees with specialization in speech-language pathology. Graduates of the program meet the American Speech-Language-Hearing Association's requirements for clinical certification, and are eligible for licensure as speech-language pathologists by the state of Oregon.

The graduate curriculum includes courses aimed at providing students with a solid understanding of the nature of speech and language disorders as well as the assessment and treatment of those disorders. A second major component of the program consists of supervised clinical practicum in which students work directly with individuals who have communication disorders. This type of activity enables students to apply knowledge gained in the classroom and acquire requisite professional skills. Students obtain their first practical experience through speech and language clinics on campus; extensive additional experience is obtained through a broad range of off-campus placements, including hospitals, schools, and community clinics.

Students are provided with research opportunities in laboratories on campus as well as through liaisons with institutions such as Oregon Health & Science University and the VA Medical Center.

Admission requirements

In addition to the University requirements for admission to graduate programs (page 62), candidates for the master's degree program in speech-language pathology must have a background of undergraduate courses in speech and hearing sciences and related disciplines. These pre-requisites can be met by completing a bachelor's degree in speech and hearing sciences at Portland State University or elsewhere. Individuals with bachelor's degrees in other disciplines may obtain prerequisite courses by enrolling in the department for a year of postbaccalaureate studies.

For students pursuing this option, the following courses must be taken to qualify for admission to the master's degree program:

SpHr 370 Phonetics and Acoustics
SpHr 371 Anatomy and Physiology of Speech and Hearing
SpHr 380 Language Disorders in Children
SpHr 372 Speech and Language Development in Children
SpHr 464/564 Articulation/Phonological Disorders
SpHr 487/587 Basic Audiology
SpHr 488/588 Advanced Audiology
SpHr 495/595 Organic Communication Disorders
SpHr 496/596 Introduction to Clinical Management

The courses listed below are not required for admittance into the graduate program, but are required for a master's degree in speech and hearing sciences and may be taken by postbaccalaureate students:

Stat 243, 244 Introduction to Probability and Statistics, or Stat 543
SpHr 489/589 Aural Rehabilitation
SpHr 461/561 Neurology of Speech and Hearing

All students applying for admission to the master's degree program should have successfully completed one or more courses in each of the following areas: biological sciences, physical sciences, mathematics, and social/behavioral sciences.

Students may apply for admission to the master's degree program while in the process of completing their bachelor's degree or postbaccalaureate year. Completion of the prerequisite courses does not guarantee admission into the program.

Application procedure. Candidates applying for admission to the graduate program in Speech and Hearing Sciences must submit application packets to the department and the Admissions Office as outlined on page 62. Specific requirements of the department include:

1. Recommendation forms completed by three individuals closely acquainted with the applicant's academic or employment background.
2. Official transcripts from all colleges and universities attended.
3. Official scores of the Graduate Record Examination.
4. A written narrative outlining the candidate's academic background and professional goals.

The recommendation forms and details of the application material can be obtained from the departmental office or Web site.

Conditional status. Students are admitted to the program with conditional status. To be given regular status and to be retained in the graduate program, students must complete 12 graduate credit hours of coursework in speech and hearing sciences with a minimum GPA of 3.00. The granting of regular status also requires the attainment of at least a B- in two consecutive or concurrent clinical practica (4 credits each) in speech-language pathology.

Degree requirements

University master's degree requirements are listed on page 70. Specific departmental requirements are as follows:

1. Students must meet the academic and practicum requirements for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association.
2. Students must complete a minimum of 50 credit hours at the graduate level, including the following core courses: SpHr 550 (2 terms), 551, 553, 554, 559, 560, 563, 565, 566, 570, 581, 582, 583, 584 and 585. A grade of B- or above must be obtained for each core course.
3. Introductory courses in statistics. Stat 243, 244 Introduction to Probability and Statistics, or Stat 543, or equivalent coursework can fulfill this requirement. The statistics courses do not count toward the minimum credits for the master's degree and can be taken prior to entry into the graduate program. The statistics requirement cannot be satisfied by completing SpHr 560.
4. Students must complete three consecutive terms of full-time study during their first year in the graduate program.
5. Clinical practicum. Students must complete a minimum of 400 clock hours of supervised clinical experience in the practice of speech-language pathology. These include 25 hours of observation. A minimum of 50 of the remaining clock hours of clinical practicum must be completed in speech and language clinics at Portland State University. These 50 hours can be accrued through enrollment in

SpHr 486/586, 490/590, 498/598, 550 or 551. The remaining clock hours can be obtained through various off-campus placements. In order to receive credit for clinical hours completed in a clinical course, the student must obtain a grade of B- or above in the course.

6. Culminating Experience. Students must complete one of the culminating experiences listed below. The decision as to which of these options to pursue is to be made in conjunction with the student's academic adviser.

- a. Comprehensive Examinations—The student must pass written comprehensive examinations. These are normally taken during the spring term of the student's second year of graduate study. Specific details of the administration and scoring of the exams will follow current departmental guidelines. Students must consult with their academic adviser during the first year of their graduate program to begin preparation for the examination. Students will register for 3 credits of SpHr 501 Research: Comprehensive Examination during the term in which they write the examination.
- b. Master's thesis—Students opting to complete a thesis will follow the University guidelines for theses outlined on page 72. The student must pass a final oral examination before a committee consisting of at least two faculty members from the Department of Speech and Hearing Sciences and one faculty from another department appointed by the Office of Graduate Studies. Students pursuing this option are required to register for a minimum of 6 to 9 credits of SpHr 503 Thesis.
- c. Master's project—The student will complete a project related to his or her academic discipline. The student will comply with current departmental guidelines on the selection of the topic and format of the project. The project will be completed under the direction of a faculty member of the Department of Speech and Hearing Sciences. In addition to the project director, at least one other faculty member from the department must serve on the project committee. Students pursuing this option are required to register for 6 to 9 credits of SpHr 506 Special Project.

Oregon Education Licensure

Students enrolled in the masters degree program have the option of completing the requirements for the Oregon Education Initial License in Communication Disorders. The initial license is required for employment as a Speech-Language Pathologist in

Oregon schools. The following undergraduate and graduate courses are required for the initial license: SpHr 370, 371, 372, 380, 389, 461/561, 464/564, 486/586, 487/587, 488/588, 489/589, 495/595, 496/596, 498/598, 550, 551, 566, 581, 582, 583, 584, 585, 591, and 592.

Courses

Courses with an asterisk () are not offered every year.*

**SpHr 199
Special Studies (Credit to be arranged.)**

**SpHr 262
Voice and Diction (4)**

Study and practice of principles of voice production and articulation of speech sound, with attention to elementary speech physiology and phonetics. Intended for students who desire to develop more effective speech and for meeting special needs of teachers, radio and television speakers, public speakers, and others who require special competence in speaking. Emphasis on both theory and practice. Two hours per week of laboratory work required.

**SpHr 365
Survey of Speech, Language, and Hearing Disorders (4)**

Designed as an overview of speech, language, and hearing in children and adults. Topics to include: cleft palate, stuttering, hearing impairment, and multi-cultural differences. Recommended for general speech students.

**SpHr 370
Phonetics and Acoustics (4)**

A study of sounds used in speech, their acoustic properties, and their transcription utilizing the IPA; description of sounds, their symbolic nature, their production, and physical and psychological problems involved in their perception. The acoustical bases of speech and hearing will also be addressed.

**SpHr 371
Anatomy and Physiology of Speech and Hearing (4)**

A study of the anatomical and physiological bases of speech, language, and hearing.

**SpHr 372
Speech and Language Development in Children (4)**

Provides students with a foundation of knowledge regarding basic processes of language acquisition. In addition to the study of normal language development from a theoretical, developmental, and clinical perspective, related areas of study include cognition, social interactions, play, and literacy. Bilingual and multicultural issues are also addressed.

**SpHr 380
Language Disorders in Communication I (4)**

An overview of developmental language disorders in children. Disorders will be presented in terms of etiology, incidence, and characteristics. Assessment issues and treatment principles will be discussed. Prerequisite: SpHr 372.

**SpHr 389
Sign Language: Theory and Practice (4)**
Basic mastery of American Sign Language (ASL) and the manual alphabet. Discussion of ASL

rules and grammatical structures. Study of cultural, social, vocational, and other related issues associated with deafness. Comparison of a variety of sign language systems and overview of the controversies between total communication and oralism. Includes ASL practice in class and lab assignments. Recommended prerequisite: upper-division standing.

SpHr 399
Special Studies (Credit to be arranged.)

SpHr 401/501

Research (Credit to be arranged.)

Consent of instructor. Speech Communication Laboratory.

SpHr 404/504
Cooperative Education/Internship (Credit to be arranged.)

SpHr 405/505

Reading and Conference (Credit to be arranged.)

Consent of instructor.

SpHr 406/506

Special Projects (Credit to be arranged.)

Consent of instructor.

SpHr 407/507

Seminar (Credit to be arranged.)

Consent of instructor.

SpHr 408/508

Workshop (Credit to be arranged.)

SpHr 409/509

Practicum (Credit to be arranged.)

Students must show proof of professional liability insurance.

SpHr 410/510

Selected Topics (Credit to be arranged.)

SpHr 461/561

Neurology of Speech and Hearing (4)

A course specifically designed for speech and hearing majors to provide a study in-depth of the neurology of the speech and hearing mechanisms with special attention given to the major deviations affecting verbal communication.

SpHr 464

Speech Disorders in Children (4)

Discussion of normal speech development and how it can differ in individuals with speech disorders. Exploration of assessment, diagnosis, and treatment for speech disorders in children. Introduction to linguistic and cultural factors related to speech development and disorders, and to special populations with high incidence of speech disorders. Prerequisites: SpHr 370, SpHr 372.

SpHr 470/570

Audiometric Practicum (2)

Supervised clinical practice designed for Speech and Hearing Science majors. Practical training in basic pure-tone and speech audiometry, including audiometric screening of children and adults. Prerequisite: SpHr 488/588.

***SpHr 486/586**

Urban Language Clinic (2)

This on-campus practicum provides students an opportunity to participate in a speech and language enrichment classroom program for children. This practicum experience emphasizes development and use of speech and language units and pragmatic techniques with children from various cultural backgrounds. This is a

prerequisite for SpHr 591. Recommended prerequisite: SpHr 498/598.

SpHr 487/587

Basic Audiology (4)

Introductory course in audiology emphasizing basic acoustics and psychoacoustics, anatomy and physiology of the ear, hearing measurement, and types and causes of hearing impairment.

SpHr 488/588

Advanced Audiology (4)

Introduction to the audiological test battery. Topics include bone-conduction, masking, speech audiometry, and objective tests. Auditory pathologies and their audiometric correlates are also covered. Recommended prerequisite: SpHr 487/587.

SpHr 489/589

Aural Rehabilitation (4)

Theoretical course covering the role of speech-reading (lip reading) and auditory training as it relates to speech, language, and communication. Historical perspectives and philosophies considered, communication systems, speech acoustics and perception, amplification and hearing aids, speech reading, and auditory training. Multicultural issues will be included. Recommended prerequisite: SpHr 488/588.

***SpHr 490/590**

Audiological Rehabilitation Clinic (2)

Supervised clinical practicum in the diagnosis and rehabilitation of children and adults with hearing disabilities; staff seminars in case dispositions. Maximum: 18 credits. Recommended prerequisite: SpHr 489/589, 498/598.

SpHr 495/595

Organic Communication Disorders (4)

Introduction to speech and language disorders with emphasis on voice disorders, stuttering disorders and neurogenic disorders; cleft palate and cerebral palsy will complete the survey. Recommended prerequisite: SpHr 371.

SpHr 495L

Directed Clinical Assistant Lab (2)

Designed to acquaint preprofessional students with the direct management of speech, language, and hearing cases in cooperation with advanced clinicians and under the direction of a qualified clinical supervisor. Students enrolled in this course will participate in all phases of clinical operation, inclusive of: scheduling, diagnostic management, parent conferencing, report writing, material preparation, etc. Recommended corequisites: SpHr 370, 372, 380, 464.

SpHr 496/596

Introduction to Clinical Management (4)

Provides an introduction to management of persons with communication disorders in terms of assessment and treatment of persons with speech, language, and hearing disorders. Administration and interpretation of standardized tests, interviewing, and case-history taking will be covered. Methods, materials, and techniques in the treatment of communication disorders will be addressed. Terminology and basic techniques of modifying speech, language, and hearing disorders, with specific application to clinical management, will be given, with special consideration of program design and delivery. Theoretical considerations and practical applications of behavior modification theory as

applied to children and adults with speech, language, and hearing problems. Recommended prerequisites or corequisites: SpHr 464/564, 465/565.

SpHr 498/598

Speech-Language Practicum (4)

Supervised clinical work with speech and/or language disordered children and adults enrolled for assessment and intervention in the PSU Speech and Hearing Clinic and/or associated clinical programs; group discussion of clients, clinical techniques and clinical principles. Recommended prerequisites: SpHr 380, 464/564, 494/594, 496/596 (with grade B- or better).

SpHr 503

Thesis (Credit to be arranged.)

SpHr 550

Advanced Speech Disorders Practicum (4)

Students will participate in the evaluation and treatment of children and adults with disorders of speech under the supervision of faculty. Prerequisites: SpHr 495, 498/598.

SpHr 551

Advanced Child Language Disorders Clinic (4)

This on-campus practicum provides students with an opportunity to apply methods covered in SpHr 584 to a practicum experience. Students will evaluate language skills and design and deliver language intervention under faculty supervision to preschool and school-age children with speech/language delays/disorders. Various models of language intervention will be stressed. This is a prerequisite for SpHr 591. Prerequisite: SpHr 498/598, 580. Corequisite: SpHr 584 or permission of instructor.

SpHr 553

Counseling in Communication Disorders (2)

Designed for speech-language pathology and audiology majors to receive an introduction into the major theories of counseling techniques and how they can implement these techniques throughout their careers.

SpHr 554

Advanced Speech Sound Disorders: Theories and Application (4)

Development and disorder of speech sound production, with particular emphasis on children. Phonological and phonetic theories used in understanding speech and speech sound disorders. Various means of assessing and providing intervention for speech sound disorders. Information specific to special topic areas, such as childhood apraxia of speech, cleft palate, childhood dysarthria, and oral motor approaches to intervention.

***SpHr 555**

Hearing Aids I (4)

Introduction to amplification for the hearing impaired. Topics include: types of hearing aids and their components, electroacoustic characteristics of hearing aids, coupler and real-ear measurement, output limitation, programming and earmolds. Prerequisite: SpHr 488/588.

***SpHr 556**

Hearing Aids II (4)

Advanced topics in amplification for the hearing impaired. Topics include: hearing aid evaluation, prescription of electroacoustic character-

† SpHr 486/586, and 498/598 require 25 hours of confirmed clinical observation as part of the courses listed as prerequisites.

istics, fitting procedures, and post-fitting counseling. Prerequisite: SpHr 555.

***SpHr 557
Hearing Aids Laboratory (2)**

Provides practical experience in hearing aid testing, repair and modification.

***SpHr 558
Computer Applications in Communication Disorders (2)**

Provides students with basic information on using computerized resources in diagnosis, treatment, and data management. Internet information resources will also be explored.

**SpHr 559
Augmentative and Alternative Communication (2)**

Introductory course in augmentative and alternative communication (AAC) with a focus on manual and technological communication methods. Includes strategies for appropriate assessment of speech, language, cognitive, and motor skills, and addresses partner support requirements for AAC use. Students gain knowledge and skills for treating children, adolescents, and adults with moderate to severe congenital or acquired disorders in speech and language.

**SpHr 560
Research Methods in Speech-language Pathology and Audiology (4)**

Introduction to research methods in communication disorders, including clinical efficacy studies. Students become familiar with the scientific method, issues in hypothesis tests, approaches to literature review, data collection, reduction, and analysis. Background in statistics is helpful. Questions of current interest in the fields of speech, language, and hearing are presented. Students are encouraged to focus on one as a thesis topic and develop a mini-prospectus for a thesis through class assignments. Computer applications in research also outlined. Prerequisites: Stat 243, 244 or equivalent.

***SpHr 562
Instrumentation in Speech Sciences (4)**
Designed for speech-language pathology majors to enable exploration of current instrumentation in the speech sciences. Provides exposure to recording equipment, flexible and rigid endoscopy, spirometry digital speech analysis as well as to a variety of computer applications for use in evaluation and therapeutic settings. Prerequisites: SpHr 380, 464/564, 495/595, 560.

**SpHr 563
Adult Language Disorders (4)**

Serves as an introduction to neurogenic communication disorders. Topics include aphasia, dementia, right-hemisphere disorders, and brain injury. Causes, symptoms, and multicultural issues in assessment and treatment will be discussed. Prerequisite: SpHr 495/595.

**SpHr 565
Dysphagia (4)**

Designed to provide in-depth study of anatomy and physiology of swallow mechanism. Assessment and treatment of dysphagia and feeding disorders in neonatal through older adult populations to be addressed. Prerequisite: SpHr 563.

**SpHr 566
Motor Speech Disorders (4)**

Advanced seminar in diagnosis and treatment of the dysarthrias and apraxia of speech. Prerequisites: SpHr 495, 563, 565.

***SpHr 567
Craniofacial Disorders and Speech (3)**

Acquaints students with clinical management of cleft palate and other craniofacial anomalies, particularly the role of speech-language pathologist. Students gain exposure to analysis of articulation and resonance disorders of persons with velopharyngeal incompetence. Prerequisite: SpHr 495/595.

***SpHr 569
Advanced Audiology Practicum (2)**

Supervised clinical practicum in the PSU Speech and Hearing Clinic. Students provide assessment of hearing and hearing aid evaluation and fittings for children and adults. Prerequisites: SpHr 488/588, 577, or concurrent.

***SpHr 571
Advanced Hearing Science I (4)**

Psychoacoustics and the fundamentals of acoustics. Topics include simple harmonic motion, simple and complex sounds, decibel scales, and impedance. Also covered are psychophysical measurement, auditory sensitivity, pitch and loudness perception, masking, auditory nonlinearities, and binaural hearing. Prerequisite: SpHr 487/587.

***SpHr 572
Advanced Hearing Science II (4)**

Anatomy and physiology of the auditory system, including transmission properties of the middle ear, cochlear mechanics and transduction, and processing of auditory information from cochlea to cortex. The course begins with an introduction to basic electricity, including Ohm's Law, series and parallel circuits, alternating and direct currents. Prerequisite: SpHr 571.

***SpHr 573
Industrial Audiology (2)**

This course focuses on the role of audiology in

hearing conservation in industry. Includes effects of noise on the auditory system, noise measurement, and medical-legal aspects of noise exposure. Prerequisites: SpHr 487/587, 488/588, 572.

***SpHr 574
Objective Auditory Measures (4)**

Introduction to clinical measurement of auditory evoked potentials. Normative and pathological aspects of electrocochleography and brainstem responses. Also covers advanced acoustic immittance, including physical principles and diagnostic applications. Prerequisite: SpHr 488/588.

***SpHr 575
Pediatric Audiology (2)**

This course covers the embryology of the ear, the development of hearing, the etiology and pathology of hearing loss in children, and the assessment of hearing in children. It also covers amplification for hearing impaired children, and management of children with hearing losses. Prerequisite: SpHr 488/588.

***SpHr 576
Geriatric Audiology (2)**

The study of hearing in aging. Physiological changes in the hearing mechanism associated with primary and secondary aging. Audiologic assessment of the prebycusic patient, as well as intervention procedures are emphasized. Psychosocial forces associated with hearing impairment during the aging years are examined. Prerequisite: SpHr 488/588.

***SpHr 577
Medical Audiology I (4)**

Evaluation of practical application of differential auditory tests used in the assessment of various hearing disorders. Focus on procedures, applications, and implications of various auditory measures forming test batteries which assist in the detection of conduction, cochlear, and retrocochlear lesions. Class demonstrations and supervised experiences. Prerequisites: SpHr 487/587, 488/588.



***SpHr 578
Medical Audiology II (2)**

Continues examination of medical audiology from SpHr 577. Specific topics to be addressed include otacoustic emissions, central auditory assessment. Class demonstrations and supervised experiences. Prerequisite: SpHr 577.

***SpHr 579
Medical Audiology III (2)**

Continues examination of medical aspects of audiology from SpHr 577 and 578. Specific topics to be addressed include central auditory processing and tinnitus. Evaluation and management of both pathological conditions will be included. Prerequisite: SpHr 578

***SpHr 580
Vestibular Disorders and Evaluation (4)**

An in-depth examination of anatomy and physiology of the vestibular system. Observation and experience with evaluation protocols including electronystagmography and posturography.

**SpHr 581
Stuttering (4)**

Study of stuttering theories, research, methods of diagnosis, and treatment for stuttering and other disorders of fluency. Prerequisite: 495/595.

**SpHr 582
Voice Disorders (4)**

Deviations of voice found in children and adults. Study of normal and abnormal function of the voice mechanism. Attention to detection, referral, and differential diagnosis of voice problems. Demonstrations of typical voice problems; demonstrations in examination and treatment procedures; review of recent literature and research. Prerequisite: SpHr 495/595.

**SpHr 583
Language Development and Disorders in Children (4)**

Provides students with a basis of knowledge of current research related to language acquisition in children, from both a theoretical and developmental perspective. Normal language processes will be used as a framework for the study of language differences and disorders in the acquisition of language. Areas of study will include specific language and learning disorders, and language delays secondary to mental retardation, autism, brain lesions/pathology, and hearing impairments. Related areas of development, including cognition, play, learning, and literacy acquisition will be discussed. Issues of bilingualism and multicultural issues will also be addressed.

**SpHr 584
Assessment and Treatment of Language Disorders: Birth to Age Five (4)**

Outlines causation, prevention, evaluation, and management procedures for addressing developmental language disorders in infants, toddlers, and preschool children. Formal and informal assessment procedures will be covered. Uses and misuses of standardized tests will be discussed. Models of language disorders will be compared and contrasted. Speech sample analysis procedures will be studied. Pragmatic intervention techniques will be stressed. Relations between language and phonology and multicultural issues will also be included. Family-centered practice techniques will be emphasized. Prerequisite: SpHr 498/598, 583. Corequisite: SpHr 551.

**SpHr 585
Assessment and Treatment of Language Disorders in School-aged Children and Adolescents (4)**

Provides information on assessment and intervention of language and learning disorders in

children, aged six through adolescence. Formal, informal, dynamic, and curriculum-based assessment of language difficulties will be covered. Treatment topics will include service delivery models, including consultation and collaboration with other school personnel, and intervention strategies. The relationship of language and learning disabilities will be addressed, with a focus on the assessment and treatment of language-based disorders of reading and writing. Issues of assessment and treatment in culturally diverse populations will be presented. Prerequisites: SpHr 583, 584.

**SpHr 591
Student Teaching: Speech-language Pathology (10)**

Practicum in speech-language pathology in the public school setting under the direction of a supervising speech-language clinician (ASHA CCC-SP). Students participate in the following activities: diagnosis and evaluation; section of caseload and scheduling; management of an entire caseload; maintaining appropriate records; handling both incoming and outgoing referrals; and parent/teacher/staff conferences. Concurrent registration in SpHr 592 required. Prerequisites: admission to teacher education program, 3 terms of clinical practicum to include one completed at PSU, 3.00 GPA in speech major. Admission by approved application only, one full academic term in advance.

**SpHr 592
Seminar: Speech-language Pathology in Schools (2)**

Survey of current methods and materials available to and appropriate for the public school speech-language pathologist. Specific problems encountered in the practicum experience are utilized as topics of discussion. Prerequisite: SpHr 585. Concurrent registration in SpHr 591 required.

Women's Studies

469 Neuberger Hall
503-725-3516
www.ws.pdx.edu/

**B.A., B.S.
Minor
Post-baccalaureate Certificate**

Women's Studies is an interdisciplinary program designed to foster students' personal and intellectual development and to prepare them for socially responsible citizenship as well as a broad range of careers. Women's studies advisers work closely with each student to craft a course of study appropriate to the student's academic interests and post-graduate goals.

An expanding field of scholarship, women's studies is on the cutting edge of

educational and intellectual innovation. Courses offered through many different disciplines explore how gender has shaped culture, language, social, economic, and political institutions and what the world looks like, once women's experience is fully included in our thinking. The women's studies core curriculum encourages students to develop critical thinking skills and an appreciation for the range of theoretical frameworks and methodologies present in contemporary feminist scholarship. Courses incorporate the diversity of women's experience with attention to race, class, and sexual orientation as well as gender. Core courses also encourage students' active participation through discussion, informal as well

as formal writing, and collaborative learning in the classroom.

Experiential learning plays an important role in a student's progress through the women's studies curriculum. The program's extensive and long-established ties with organizations in the metro area provide wide-ranging opportunities for students to apply their classroom knowledge in a community setting. Many students discover a life's vocation through these experiences, and all develop new skills. Guidelines for women's studies internships, practica, and independent study are flexible in order to meet individual needs. A degree in women's studies provides the foundation for life-long learning as well as background and experience for careers in teaching.

counseling and social work, business, law, health sciences, public administration, public relations, and research.

Women's studies students participate in planning the program's educational, cultural, and social events and advise the faculty on matters of curriculum and educational policy. The program also maintains a resource library open to all students.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. In addition to meeting the general University degree requirements, the major in women's studies must complete a required core program of 32 credits (24 classroom hours, including a senior seminar, and 8 hours in experiential learning) and an individual program of study (20 credits). For the individual program, students will design an emphasis which is based in a discipline or in a theme that crosses disciplines.

Individualized program. To be developed in consultation with the student's adviser. Each student pursuing a women's studies major will select or be assigned an adviser who is knowledgeable in the student's area(s) of academic interest. In order to be considered for the degree, the individual program of study must carry approval of the adviser. Changes in this individual program must be similarly approved. Non-approved individual programs will not be considered to meet major requirements. In designing their individual program, students may follow either a discipline-based emphasis or a theme-based emphasis.

A **discipline-based emphasis** will consist of five courses (20 credits) in a department or program outside women's studies. Two of these courses are to be courses which familiarize students with that discipline's materials and approaches. The other three courses in the discipline are to be cross-listed with women's studies or approved by the student's women's studies adviser.

A **theme-based emphasis** will consist of five courses which together form a coherent multi-disciplinary approach to a subject. All of the courses are to be cross-listed with women's studies or approved by the student's women's studies adviser.

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling major requirements with the following exceptions: one women's studies elective course, WS 404

Cooperative Education/Internship, WS 409 Practicum.

	Credits
Core courses	
WS 101 Introduction to Women's Studies	4
WS 301 Gender and Critical Inquiry	4
WS 307 Women, Activism, and Social Change	4
WS 315 Feminist Analysis	4
WS 415 Senior Seminar	4
One of the following courses:	
WS 340, WS 341, WS 342, WS 370, WS 428	4
Experiential learning	8
WS 404 Internship (3)	
WS 409 Practicum (3)	
WS 411 Experiential Learning Seminar (2)	
Individualized program (to be approved by adviser)	20
Total	52

Requirements for minor. A minor in women's studies will consist of 28 credits. Students will be required to take 12 credits in the core courses (not including WS 404, 409, WS 411). The additional 16 credits may be fulfilled by either core courses (including WS 404, 409, WS 411) or women's studies electives including courses cross-listed with other departments or approved by the women's studies coordinator.

	Credits
Twelve credits from the core courses (not including WS 404, 409, WS 411)	12
Additional credit may be fulfilled by either core courses (including WS 404, 409, WS 411) or women's studies electives	16
Total	28

Requirements for post-baccalaureate certificate.

	Credits
Introduction to Women's Studies	4
WS 301 Gender and Critical Inquiry	4
WS 315 Feminist Analysis	4
WS 415 Senior Seminar	4
WS 404 Cooperative Education/Internship or WS 409 Practicum	6
Approved electives (minimum of 12 upper-division)	16
Total	38

In meeting the 16 elective credits requirement, students may take a maximum of 12 credits in any one academic area (arts and letters, science, social science) and 4 credits in lower division courses.

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling Certificate requirements with the following exceptions: one women's studies elective course, WS 404 Cooperative Education/Internship, WS 409.

Courses

Courses with an asterisk (*) are not offered every year.

WS 101 Introduction to Women's Studies (4)

A survey and critical analysis of the essential issues of feminism and their effects on women's lives. Topics include: marriage, family, education, justice and reform, health care, sexuality, political

and economic status. Focuses on present realities and future possibilities. An introduction to the interdisciplinary field of women's studies.

WS 120 Workshop for Returning Women (4)

Designed for those who have experienced an interruption in their formal education. Examines the educational history of American women. Analyzes the ways in which the roles, status, and experiences of women affect educational decisions and performance. Includes the development of skills and self-confidence in studying, writing, research, examinations, time management, mathematics and science. Credit cannot be used to satisfy certificate requirements.

WS 199 Special Studies (Credit to be arranged.)

A variable topics course dealing with contemporary and historical issues in feminism. Recent offerings have included History of Women Artists and History of Women in Science. WS 199 is also available for students who wish to pursue directed independent study.

WS 260 Introduction to Women's Literature (4)

Introduction to the texts and contexts of women's literature.

WS 301 Gender and Critical Inquiry (4)

This is a theory course. Cross-discipline introduction to feminist frameworks including theoretical issues and varying approaches to the study of women and gender. Attention to the relationship between gender and other axes of inequality. Emphasis on the development of critical thinking skills. Recommended prerequisite: WS 101.

WS 306 Global Gender Issues (4)

Study of gender issues in an international perspective. Courses will focus on a theme that can be studied comparatively, such as gender and public policy, or on a particular country or national/ethnic group, such as Filipina women. This course is repeatable with different topics.

WS 307 Women, Activism and Social Change (4)

Women working collectively to create social change; the activism of self-identified feminists as they struggle to resist and transform oppression as well as the activism of women allied with other social movements. Examines activists' strategies, organizations, goals, accomplishments, and unmet challenges. Topics may include reproductive rights, feminist labor organizing, queer political movements, or third world liberation movements.

WS 308 Topics in Gender, Literature, and Popular Culture (4)

Media, popular culture, and literature from a feminist perspective which focuses on how gender and other dimensions of power relations are expressed, reproduced, and challenged within cultural expression. Such topics as lesbian/gay literature, gender/difference in television, and women in contemporary film.

WS 309 Disney: Gender, Race, and Empire (4)

Explores construction of gender, race, and empire in the animated films of Disney. Examines the content of Disney films created

within particular historical and cultural contexts in order to understand cultural production in relation to intersections of racism, sexism, colonialism, and imperialism.

**WS 310
Psychology of Women (4)**

Review and evaluate assumptions underlying psychological research on women. Survey the research in areas such as the development of sex differences, acquisition of gender roles, and maintenance of gender stereotypes. Explore the pertinence of these findings to topical areas such as women's work roles, women and mental health, and the women's movement. Recommended prerequisite: 3 credits in psychology.

**WS 312
Feminist Philosophy (4)**

Critically examines traditional schools of philosophical thinking from a feminist perspective. Recommended prerequisite: one philosophy course from other than Phl 103, 104, 206.

**WS 315
Feminist Analysis (4)**

This is an advanced theory and methods course. An exploration of the interpretive frameworks and research strategies utilized in contemporary feminist scholarship. Drawing on examples from more than one discipline, students will be introduced to a range of theoretical and methodological approaches, while learning to identify the choices that scholars make in carrying out their work. Issues under debate within feminist scholarship as well as the differences between feminist scholars and those working from other frameworks will be examined. Recommended prerequisite: WS 301.

**WS 330
Women of Color in the United States (4)**

A variable topics course focusing on issues which affect women of color in the United States, historically and today.

**WS 331
Women in the Middle East (4)**

Aims to explore the role and status of women in the contemporary Middle East with respect to institutions such as the family, law, education, work and politics—areas which intersect and overlap with broader cultural questions about women and their place in tradition, modernity, nation-building, Islam and the West. This course is the same as FL 331 and Intl 331, may only be taken once for credit.

**WS 332
Race, Class, Gender, and Sexuality in the United States (4)**

Examines the ways in which race, class, gender, and sexuality are conceptualized and represented in contemporary U.S. culture and society; investigates the institutions, practices, and discourses that comprise notions of race, class, gender, and sexuality in the United States and how these social categories shape and are shaped by one another.

**WS 337
Communication and Gender (4)**

An examination of similarities and differences in male and female communication styles and patterns. Particular attention given to the implications of gender as social construct upon perception, values, stereotyping, language use, nonverbal communication, and power and conflict in

human relationships. Discussion of influence of mass communication upon shaping and constructing male and female roles.

**WS 340
Women and Gender in America to 1848 (4)**

This course is the same as Hst 340. See page 157 for course description.

**WS 341
Women and Gender in America 1848-1920 (4)**

This course is the same as Hst 341. See page 157 for course description.

**WS 342
Women and Gender in the U.S. 1920 to the Present (4)**

This course is the same as Hst 342. See page 157 for course description.

***WS 343
American Family History (4)**

History of the American family from the colonial period to the present. The course will draw upon textual sources and oral histories in examining changes in families in the colonial period, and the nineteenth and twentieth centuries. Recommended prerequisite: Hst 201, 202, Sophomore Inquiry (American Studies), or consent of instructor.

**WS 347, 348
Science, Gender, and Social Context (4, 4)**

Two-term course explores the strengths and limitations of science to describe and predict nature through laboratory and field investigations. These activities will illustrate the transition from a reductionist view of our natural environment to a systems-oriented view. It will place this historical shift in understanding and scientific practice in the contexts of gender, race, and class using selected case studies in environmental management. Includes laboratory and/or fieldwork. Recommended prerequisite: UnSt 299 Intro to Women's Studies. This course is the same as Sci 347, 348; may only be taken once for credit.

**WS 350
Introduction to Interpersonal Violence (1)**

Explores the roots of interpersonal violence, the dynamics of domestic violence against women and children and sexual assault, their causes and effects, community resources for intervention and prevention. Discusses the social norms that influence interpersonal violence as well as the psychological results of violence. Examines the big picture of interpersonal violence and how all forms are interrelated.

**WS 351, 352, 353
Children and Interpersonal Violence (1, 1, 1)**

The courses in this sequence will consider the victimization of children from a variety of perspectives: how they are victimized directly and indirectly and services available to them. WS 351: Special Issues for the Child Victim of Interpersonal Violence; WS 352: Children Affected by Violence; WS 353: Services for the Child Victim of Interpersonal Violence. Each class will consider child physical, emotional and sexual abuse. Recommended prerequisite: WS 350.

**WS 354, 355, 356
Interpersonal Violence and Special Populations (1, 1, 1)**

Physical, emotional and sexual abuse crosses all age, cultural, religious, ethnic, economic and

social boundaries. However, the impact of abuse and the remedies and services available to victims/survivors varies widely across different social groups. WS 354: Young Adults and Dating Violence; WS 355: Battered Women in Prison; WS 356: Diversity Awareness and Domestic and Sexual Violence. Each class will consider physical, emotional and sexual abuse. Recommended prerequisite: WS 350.

**WS 357, 358, 359
Interventions for Interpersonal Violence (1, 1, 1)**

This course sequence will consider interpersonal violence and intervention from a variety of perspectives—as an individual and societal issue. WS 357: Interventions to Help Women Caught in Interpersonal Violence; WS 358: Treatment Philosophies and Interpersonal Violence; WS 359: Holding Perpetrators of Interpersonal Violence Accountable. Each class will address physical, emotional and sexual abuse issues. Recommended prerequisite: WS 350.

**WS 360
Introduction to Queer Studies (4)**

An interdisciplinary course that focuses on the lives of lesbian, gay, bisexual, and trans people in historical and social context. Looks at the historical roots and political uses of sexual norms and sexual identities and explores the complex interactions of race, class, gender, and desire. Finally, looks at some of the current political contests around sexuality.

**WS 361
Sexual Assault (1)**

Examines sexual assault from historical, political, and psychological perspectives; the legal and medical systems' responses to sexual assault; and the trauma that results from rape and the options for healing. Recommended prerequisite: WS 350.

**WS 362
Women and Trauma (2)**

Examines effects of trauma on the brain and brain functioning, psychological effects of childhood trauma, resilience as a factor in coping with traumatic experiences, and how to foster healing in trauma survivors. Recommended prerequisite: WS 350.

**WS 363
Moving Beyond Trauma (1)**

Examines survival from interpersonal violence, draws on resiliency research to understand what fosters healing, explores the role of support systems, altruism, spirituality, and social activism in overcoming trauma.

**WS 365
The Science of Women's Bodies (4)**

This course is the same as Sci 365; may only be taken once for credit.

**WS 370
History of Sexualities (4)**

Looks at the various meanings given to sexual desires and practices throughout history. Explores sexuality as reproduction, perversion, pleasure, and as a site of both social/political regulation and subversive agency. Focuses on change over time in the North American context emphasizing the contests involving sexuality beginning with the period of European conquest and ending with looking at HIV/AIDS and transgender issues.

WS 380**Women and Politics (4)**

Analysis of the political role of women in politics. Reviews historical and contemporary analyses of women's participation and status in politics. Recommended prerequisites: PS 101, 102 or upper-division standing.

WS 399**Special Studies (Credit to be arranged.)****WS 401****Research (Credit to be arranged.)****WS 404****Cooperative Education/Internship (Credit to be arranged.)****WS 405****Reading and Conference (Credit to be arranged.)**

Consent of instructor.

WS 407**Seminar (Credit to be arranged.)****WS 409****Practicum (Credit to be arranged.)****WS 410****Selected Topics (Credit to be arranged.)****WS 411****Experiential Learning Seminar (1)**

To be taken simultaneously with WS 404 or WS 409. Students will present material based upon their experiences in practica and internships. The seminar provides an opportunity for students to reflect on the settings where they are working and analyze issues that emerge in applying feminist theory to practice.

WS 415**Senior Seminar (4)**

With a focus on analysis, critique, comparison and connection, students will work collaboratively as well as independently in this theoretical, thematically-based course. Students will be responsible for planning and leading discussion during some sessions as well as presenting and responding to work-in-progress. Recommended prerequisite: WS 315.

WS 417**Women in the Economy (4)**

Different economic theoretical perspectives are presented to account for women's particular economic roles currently and historically. Emphasis on women's responsibility for child rearing and housework; women's relatively low wages; occupational segregation by gender; economic differences among women due to ethnicity, generation, and class; and policy issues with particular importance for women's economic situation. Recommended prerequisites: Ec 201, 202.

WS 424*Women and the Law (4)**

This course is the same as PS 425; may only be taken once for credit.

WS 425**Sociology of Women (4)**

Cross-societal analysis of the position of women in industrial societies. Analysis of the social position of women and men in areas such as the family, politics, work, education, etc. Consideration and evaluation of theories of the biological, psychological, sociological basis for the behavior, characteristics, attitudes, and demographic characteristics of women. Recommended prerequisites: Soc 204, 205.

WS 426**Women and Mental Illness (4)**

Recommended prerequisites: WS 101. Also listed as Soc 426/526; may only be taken once for credit.

WS 428**Lesbian History (4)**

Surveys the history of lesbian existence in the United States. Begins by asking what "lesbian" means, identifying the different historical markers of female same-sex desire. Using a rich variety of primary and secondary sources, we analyze historical attitudes about female same-sex desire, follow the emergence of lesbian subcultures and communities, examine the development of sexual identities during the twentieth century, and end by considering lesbian issues.

WS 429, 430, 431**Women in the Visual Arts (4, 4, 4)**

This course is the same as ArH 429, 430, 431; may only be taken once for credit.

WS 443, 444**British Women Writers (4, 4)**

Study of the works of British women writers with attention to themes, styles, and characteristic concerns in the light of feminist criticism and scholarship. Recommended prerequisite: 15 credits in literature. WS 260 recommended.

WS 445, 446**American Women Writers (4, 4)**

Study of American women writers, with attention to themes, styles and characteristic concerns, in the light of feminist criticism and scholarship. Recommended prerequisite: 15 credits in literature. WS 260 recommended.

WS 452**Gender and Race in the Media (4)**

This course is the same as Sp 452/552; course may only be taken once for credit. See Department of Communication for course description.

WS 455**Gender and Education (4)**

This course is cross-listed as EPFA 455; may only be taken once for credit.

WS 457**The Language of Violence (4)**

This course is the same as Sp 457/557; course may only be taken once for credit. See Department of Communication for course description.

WS 467**Work and Family (4)**

An examination of the effects of work on family, and family on work, in contemporary society. Includes study of dual-career and dual-work families, effects of maternal employment on children, impact of child care and elder care on the workplace, and parental leave and other workplace supports for families. Implications of research for social policy. Recommended prerequisites: Psy 311 and 3 credits in courses numbered Psy 321 or higher.

WS 470/570**Asian American Women's Studies (4)**

Interdisciplinary course focusing on the contemporary experiences of Asian American women, examining ways in which race, gender, class, sexuality, and national identity shape the experiences of Asian American women. Topics: histories of immigration and western colonization; family and community structures; representations and stereotypes in media and popular culture; sexuality and sexual identities; mixed-heritage and bicultural experiences; the politics of language; violence against Asian American women; labor force participation; relationship to feminism; and activism and resistance.

WS 471/571**Global Feminisms (4)**

Themes and theoretical principles of global feminisms, with special emphasis placed on Third World feminist movements. Themes explored include colonialism, globalization, nationalism and nation-building, representation, global economies, and the politics of race, gender, class, sexuality, and nation. Prerequisite: WS 301 or 315 or consent of instructor.

WS 479**Women and Organizational Psychology (4)**

Examines the relationship between gender and the social organization of the workplace. Focus is on gender development as socialization (e.g. hierarchy and leadership, discrimination and harassment, deskilling) from a social psychological perspective. Strategies for change are considered. Recommended prerequisites: Psy 310 and 3 additional credits in courses numbered Psy 330 or higher.

Interdisciplinary Studies

The courses listed below are offered on an irregular basis by various departments.

ASc 410/510**Selected Topics (Credit to be arranged.)****Hum 199****Special Studies (Credit to be arranged.)****Hum 399****Special Studies (Credit to be arranged.)****Hum 405****Reading and Conference (Credit to be arranged.)****Hum 407****Seminar (Credit to be arranged.)****Hum 410****Selected Topics (Credit to be arranged.)****Hum 601****Research (Credit to be arranged.)****Hum 602****Independent Study (Credit to be arranged.)****Hum 603****Thesis (Credit to be arranged.)****Hum 604****Cooperative Education/Internship (Credit to be arranged.)****Hum 605****Reading And Conference (Credit to be arranged.)****Hum 606****Special Problems/Projects (Credit to be arranged.)****Hum 607****Seminar (Credit to be arranged.)****Hum 608****Workshop (Credit to be arranged.)****Hum 609****Practicum (Credit to be arranged.)****Hum 610****Selected Topics (Credit to be arranged.)****ISc 199****Special Studies (Credit to be arranged.)****ISc 399****Special Studies (Credit to be arranged.)****For Extended Studies and Summer Session only.****ISc 404****Cooperative Education/Internship (Credit to be arranged.)****Sc 601****Research (Credit to be arranged.)****Sc 602****Independent Study (Credit to be arranged.)****Sc 603****Thesis (Credit to be arranged.)****Sc 604****Cooperative Education/Internship (Credit to be arranged.)****Sc 605****Reading and Conference (Credit to be arranged.)****Sc 606****Special Problems/Projects (Credit to be arranged.)****Sc 607****Seminar (Credit to be arranged.)****Sc 608****Workshop (Credit to be arranged.)****Sc 609****Practicum (Credit to be arranged.)****Sc 610****Selected Topics (Credit to be arranged.)****SSc 601****Research (Credit to be arranged.)****SSc 602****Independent Study (Credit to be arranged.)****SSc 603****Thesis (Credit to be arranged.)****SSc 604****Cooperative Education/Internship (Credit to be arranged.)****SSc 605****Reading and Conference (Credit to be arranged.)****SSc 606****Special Problems/Projects (Credit to be arranged.)****SSc 607****Seminar (Credit to be arranged.)****SSc 608****Workshop (Credit to be arranged.)****SSc 609****Practicum (Credit to be arranged.)****SSc 610****Selected Topics (Credit to be arranged.)**

School of Business Administration

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B.A., B.S.—Business Administration
Minor—Advertising (for graphic design majors), Business Administration
Certificate in International Business Studies
Certificate in Food Industry Management—Graduate, Undergraduate
Postbaccalaureate Certificate in Accounting
M.B.A.—Master of Business Administration
M.S.—Master of Science in Financial Analysis
M.I.M.—Master of International Management
Ph.D.—Participating school in Systems Science Doctoral Program

The undergraduate and graduate programs in business administration are accredited by AACSB—Association to Advance Collegiate Schools of Business. AACSB sets standards for business education in terms of curricular content, quality of faculty, and adequacy of facilities.

Undergraduate programs

The undergraduate program in business administration adheres to the principle that in a free society the business enterprise must be responsibly and efficiently managed. The undergraduate degree program includes both business and nonbusiness courses. The mission of the undergraduate program is to provide students with a broad understanding of business and to equip them with the dynamic skills required to work successfully in a complex and changing global environment.

Special emphasis options are available within the business administration major and are designed to prepare students for

positions in accounting, finance, real estate finance, general management, marketing, human resource management, supply and logistics management, marketing, advertising, and information systems. The international business studies certificate, food industry management certificate, the business minor, and advertising minor for graphic design majors are also available. The School of Business also offers study abroad opportunities at the undergraduate and graduate levels.

The School of Business also offers a Weekend Business Program. Tailored for the returning student who is working full-time, the program allows students to complete their junior and senior years of the business program on Wednesday evenings and Saturdays over six terms. Students enrolled in the Weekend Business Program will complete the full curriculum of standard business courses required for a bachelor's degree in business with an option in general management through a combination of class lectures, Web-based instruction, video, e-mail, and chat rooms. Admission and major requirements for this program are identical to the traditional undergraduate program.

Student advising. Graduate advisers are located in 230 SBA and undergraduate advisers are located in 240 SBA. Current information about admission and degree requirements for students in the School of Business Administration is available there. Students should make appointments with the advising center at least once a year to ensure that requirements are being met. For program option planning and career counseling, students may make an appointment with SBA career counselors or a faculty member of their choice.



The School of Business Administration Web site, www.sba.pdx.edu, contains announcements concerning policies, upcoming activities, scholarships, and other information vital to all business and pre-business students. Information about student organizations, internships, and career opportunities can also be found there.

Admission requirements

Students may declare business administration as their major field of study at any time after admission to Portland State University. However, students must be admitted formally to the School of Business Administration (SBA) before they are allowed to enroll in certain upper-division business administration courses or to graduate with a business administration degree.

If the number of eligible applicants for admission to any business degree program exceeds that for which resources are available, acceptance will be competitive. In the event selective admission becomes necessary, the GPA computed for the required courses for eligibility for program admission will be used. Priority, within reasonable limits, will be given to resident students.

The following requirements must be fulfilled prior to applying for admission to the School of Business Administration:

1. Be formally admitted to Portland State University.
2. Have a grade point average (GPA) of at least 2.75 for each of the following:
 - a. all accepted transfer credits
 - b. all PSU graded credits
 - c. all PSU graded business credits

Students who do not meet the 2.75 GPA requirements will be considered for admission only if the GPA for their most recent 28 graded credit hours at PSU is 3.00 or higher and the applicant has a minimum 2.50 cumulative PSU GPA and a minimum 2.50 cumulative GPA for all completed business courses at PSU.

3. Have completed each of the pre-business courses with a grade of C- or better. The pre-business courses are:

- BA 101—Introduction to Business and World Affairs
- †BA 205—Business Communications Using Technology
- BA 211—Fundamentals of Financial Accounting
- BA 213—Decision Making with Accounting Information
- ‡CS 106—Computing Fundamentals II
- Ec 201, 202—Principles of Economics
- Stat 243, 244—Introduction to Probability and Statistics I and II (for business majors)
- Sp 220—Public Speaking
- UnSt 101, 102, 103—Freshman Inquiry or
- Wr 121—College Writing

Applications are due by the second Friday of each term. Students currently taking classes at PSU or another institution must wait until grades post for the current term before applying for admission.

Application forms and deadline dates are available online at www.sba.pdx.edu.

Retention policy. A minimum Portland State University cumulative GPA of 2.50 and a minimum GPA of 2.50 in business administration courses taken at Portland State University are required to remain in good standing as an admitted business administration student and for graduation with a degree in business administration.

In addition, students are expected to make satisfactory progress toward graduation by completing a minimum of 9 credits during each academic year.

Failure to maintain a 2.50 PSU cumulative GPA and a 2.50 PSU business GPA will place a student on probation. The probationary period is defined as two terms in which the student takes classes. In no instance will the period of probation extend beyond three consecutive terms beginning with the term for which the student is placed on probation. In the first term of probation the student must show progress by raising the deficient GPA(s). If improvement does not occur in the first term of probation, the student's admitted status will be disqualified at the end of the first term of probation. If improvement does occur in the first term of probation, the student will be allowed a second term to raise the GPA(s) to 2.50. By the end of the second term of probation, the deficient GPA(s) must be at least 2.50.

Students who are disqualified must reapply for admission if they desire to complete degree requirements for programs in the School of Business Administration. Disqualified students must wait at least one academic term before applying for readmission. Students applying for readmission must meet the admission requirements in force at the time of reapplication (2.75 GPA). Business students are limited to only one readmission to the School of Business Administration.

Academic disqualification. If a student who has been admitted to the School of Business Administration is academically disqualified by the University, that student will automatically lose School of Business Administration admitted status. If a student who has lost admitted status desires to complete degree requirements for programs in the School of Business Administration, that student must reapply. At the time of reapplication the student must: (1) be admitted by and in good standing with the University, (2) have completed 24 credits following disqualification (these credits

must be 300 and 400 level courses), (3) have a cumulative GPA of 2.75, and (4) have a business GPA of 2.75.

Degree requirements

Requirements for major. In addition to meeting the general University requirements, the student in business administration must take at least 82 credits in business administration courses of which at least 41 must be taken at PSU. This total will include the business core (48 credit hours if taken at Portland State), at least one option area (20-36 credits, depending on option chosen), and enough business electives to meet the minimum of 82 credits in business. Each student in business must also take at least 90 credits outside the School of Business Administration. A minimum of 180 credits is required for graduation.

Prerequisite policy. Before enrolling in any business course students should read the course description and complete any prerequisites that are listed. If a student completes a course before completing the prerequisite and later completes the prerequisite, credit for the prerequisite will not count toward 82 credits required in business. The instructor and/or SBA Administration have the authority to administratively drop any student who has not completed the prerequisites.

Business administration students must complete the following courses with a C- or better:

	Credits
Core courses	
BA 101 Introduction to Business and World Affairs	4
BA 205 Business Communications Using Technology	4
BA 211 Fundamentals of Financial Accounting	4
BA 213 Decision Making with Accounting Information	4
BA 301 Research and Analysis of Business Problems	4
BA 302 Organizational Behavior	4
BA 303 Business Finance	4
BA 311 Marketing Management	4
BA 325 Competing with Information Technology	4
BA 339 Operations and Quality Management	4
BA 385 Business Environment	4
BA 495 Business Strategy	4
Sub-total	48
Business specialization options (see descriptions below)	20-36

Business options

The School of Business Administration offers options for those students seeking specialization in a subject area. Each student must select one of these options and complete the required courses with a C- or better. Option requirements are satisfied by taking 20 to 36 upper-division credits beyond the required business core. The

† May be waived through exam.

‡ See student services for course substitutes approved by the SBA faculty.

courses specified to satisfy the option requirements are:

Accounting

Objective: to enable students to acquire the necessary technical and professional skills for successful careers in public, management, or governmental accounting.

Actg 335 Accounting Information Systems	4
Actg 360 Management Accounting	4
Actg 381, 382 Financial Accounting and Reporting	8
Actg 421 Introduction to Taxation	4
Actg 430 Governmental and Not-for-Profit.....	1
Actg 492 Auditing Concepts and Practices.....	4
Actg 495 Integrated Accounting Issues.....	4
Two upper-division accounting courses to be chosen from Actg 422, 460, 476, 485, 490, 493...	7
Total	36

Students electing accounting as an option will also be required to take: Phl 308 Elementary Ethics or Phl 309 Business Ethics; PS 101 United States Government and PS 102 United States Politics; and 3 or more credits in anthropology, psychology, or sociology.

Finance

Objective: to provide undergraduate students with the educational foundation and exposure to the broad field of finance, enabling them to develop their financial decision making skills so that they can be successful as finance professionals in their chosen financial career path.

Actg 381 Financial Accounting and Reporting I..	4
Fin 319 Intermediate Financial Management	4
Fin 441 Fundamentals of Derivative Securities.....	4
Fin 449 Valuation.....	4
Fin 452 Investments	4
Fin 456 International Financial Management	4
Fin 465 Finance Topics and Cases	4
Total	28

Real Estate Finance

Objective: to provide an understanding of the impact of the real estate industry on the local economy and the dynamics that exist between the various components of the industry. A depth of knowledge will be developed in financial accounting, financial instruments, real estate law, market analysis, appraisal, and investment.

Fin 319 Intermediate Corporate Finance	4
Fin 333 Foundations of Real Estate Analysis	3
Fin 439 Real Estate Appraisal.....	3
Fin 447 Valuation of Real Estate Investments	4
Fin 452 Investments	4
Fin 449 Real Estate Finance and Investments.....	3
Fin 409 Real Estate Practicum or USP 423 Real Estate Development and Finance.....	4
UPS 410 Real Estate Law	3
USP 448 Real Estate Market Analysis	3
Total	31

General management

Objective: to provide requisite knowledge and skills which enable the student to meet the challenges of leadership and managerial responsibilities.

Credits	
Mgmt 351 Human Resource Management	4
Mgmt 445 Organizational Design and Change.....	4
Mgmt 448 Team Processes	4
Mgmt 464 Contemporary Leadership Issues	4
Electives	8

Of the 8 credits of electives, four credits must be taken within the management area at the 400 level.

- The final four credits can be either:
- within the management area at the 400 level, or
 - from an approved list of courses, some of which will be within the SBA and some outside the SBA.

Total 24

Note: Students who wish to do a double option in general management and human resource management cannot apply more than eight common credits to each option.

Human resource management

Objective: to provide a conceptual framework, as well as the necessary knowledge, skills, and abilities, that allows students to understand what is required to more effectively manage human resources within an organization.

Credits	
Mgmt 351 Human Resource Management	4
Mgmt 461 Reward Systems and Performance Management	4
Mgmt 471 Staffing and Employee Selection	4
Mgmt 493 Human Resource Policies	4
Upper-division management courses	4
Total	20

Note: Students who wish to do a double option in general management and human resource management cannot apply more than eight common credits to each option.

Information systems

Objective: to provide students with a solid educational foundation in the design and structure of computer-based information systems and networks that will enable them to apply relevant and robust solutions that support the objectives of an organization.

Credits	
ISQA 360 Computer Programming for Business Applications	4
ISQA 380 Data Communications.....	4
ISQA 415 Database Management.....	4
ISQA 420 Systems Analysis and Design	4
Sub Total	16

Information systems electives	8
ISQA 405 Reading and Conference (credit to be arranged: 1-4)	
ISQA 407 Seminar (credit to be arranged: 1-4)	
ISQA 409 Practicum (credit to be arranged:1-4)	
ISQA 418 Client-server Application Development (4)	
ISQA 419 Web Application Development (4)	
ISQA 421 Object-oriented Modeling and Design (4)	
ISQA 424 LAN Management (4)	
ISQA 426 Introduction to Design Technologies (4)	
ISQA 428 Principles and Practices of Information Security (4)	
ISQA 436 Advanced Database Administration (4)	
Total	24

Marketing

Objective: to provide educational opportunities for those who are interested in developing expertise in marketing strategy and management, marketing information and technology, food and consumer packaged goods marketing and global marketing management.

Credits	
Mktg 363 Consumer Behavior and Customer Satisfaction	4
Mktg 460 Marketing Research.....	4
Mktg 464 Marketing Strategy and Management	4
Track required courses.....	8
Students must complete the required courses from one of the following three tracks:	

Marketing information and technology track	
Mktg 450 Product Innovation and Management (4)	
Mktg 461 E-marketing or Mktg 462 Customer Information and Relationship Management (4)	
Food and consumer package goods marketing track	
Mktg 435 Consumer Package Goods Marketing (4)	
Mktg 475 Retailing (4)	
Global marketing management track	
Mktg 376 International Business and Trade Practices (4)	
Mktg 466 International Marketing (4)	
Upper-division marketing elective(s)	8
Total	28

Advertising management

Objective: to provide the knowledge and skills necessary for students to create and execute advertising strategy within the broader context of the marketing function.

Credits	
Mktg 340 Advertising	4
Mktg 363 Buyer Behavior and Customer Satisfaction	4
Mktg 441 Media Strategy	4
Mktg 442 Creative Strategy	4
Mktg 443 Advertising Campaigns	4
Mktg 460 Marketing Research	4
Total	24

Supply and logistics management

Objective: to provide students with an interdisciplinary foundation in supply and logistics management in preparation for careers in purchasing, industrial distribution, logistics, transportation, and operations management.

Credits	
ISQA 429 Transportation and Logistics Management.....	4
ISQA 439 Purchasing and Supply Chain Management.....	4
ISQA 479 Integrated Supply and Logistics Management.....	4
Three of the following electives as approved by supply and logistics management faculty:	
ISQA 430 Transportation (4)	
ISQA 449 Process Control and Improvement (4)	
ISQA 450 Project Management (4)	
ISQA 451 Business Forecasting (4)	
ISQA 454 Supply and Logistics Negotiations (4)	
ISQA 459 Production Planning and Control (4)	
ISQA 458 Purchasing and Logistics within the Food Industry (4)	
ISQA 469 Productivity Analysis (4)	
ISQA 410 Selected Topics (3-4)	
Actg 360 Management Accounting (4)	
Mgmt 351 Human Resource Management (4)	
Mktg 452 Business-to-Business Marketing (3)	
Other electives as approved by supply and logistics faculty.	
Total	21-24

Requirements for minor in business administration. The School of Business Administration offers a 24-credit minor to students majoring in other disciplines who wish to add a business background to their program of study. The minor emphasizes an applied approach to the basic functional areas of business, including accounting and finance, organizational management, marketing and advertising, and entrepreneurship. It is well-suited for the student majoring in the liberal arts and sciences, architecture, fine and performing arts, engineering, urban and public affairs, or pre-health sciences who intends to work as an independent contractor or operate a small firm or practice.

Coursework requirements for the minor in business administration are as follows. Please note that courses in the minor (except BA 101) may not be used to satisfy business major requirements.

Credits	
BA 101 Introduction to Business.....	4
BA 306 Working with Money for Business Minors.....	4
BA 316 Working with Customers for Business Minors.....	4
BA 326 Working with People for Business Minors.....	4
BA 336 Working with Information for Business Minors	4
BA 346 Working as an Entrepreneur for Business Minors.....	4
Total	24

The PSU cumulative GPA and the PSU business GPA must be 2.00 for a student to graduate with the minor.

Requirements for advertising management minor for graphic design majors.

The advertising management minor for graphic design majors provides critical marketing and advertising business skills to students who plan careers in the graphic design field. The six courses in the minor provide exposure to and understanding of advertising and marketing principles, including marketing's role in business, consumer behavior, identifying target markets, creative and media strategy development, and promotional campaign planning.

Space is limited in the advertising management minor. Interested students should contact the assistant dean for student affairs for the School of Business Administration. Courses in the minor include:

	Credits
BA 311 Marketing Management	4
Mktg 340 Advertising	4
Mktg 363 Consumer Behavior and Customer Satisfaction	4
Mktg 442 Creative Strategy	4
Mktg 443 Advertising Campaigns (4) or National Student Advertising Competition (8)....	4-8
One 400-level Mktg elective	4
Total	24

Certificates

International Business Studies Certificate

The International Business Studies Certificate provides undergraduate students with an educational foundation in the field of international business. Certificate requirements include the study of cultural, economic, social, and political aspects affecting business operations.

Students are required to gain admission to the School of Business Administration through the regular admission process and must complete degree requirements specified for a business administration major. In addition, students must complete all certificate requirements as specified below.

Business Administration requirements

Business core

BA 101, 205, 211, 213, 301, 302, 303, 311, 325, 339, 385, 495

International business requirements

Fin 456 International Financial Management

Mktg 376 International Business

Mktg 466 Principles of International Marketing

Business option requirements

Choose from:

Accounting, Finance, Real Estate Finance, General Management, Human Resources, Information Systems, Advertising Management, Marketing, and Supply and Logistics Management.

International Business Studies Certificate students are encouraged to spend one or more summers in

overseas management training work experience by participating in the Portland State University AIESEC exchange program for business and economics students or other overseas internship and exchange programs. Several such programs are available through the School of Business Administration.

Requirements outside the School of Business Administration

Foreign language (two-year proficiency)

Economics courses (two courses) selected from:

Ec 340, 440, 441, 442, 445, 446, 447, 450, or, with approval, other upper-division economics courses related to international studies

Area studies—four courses from each of two departments selected from: anthropology, geography, history, political science

The area study courses will be upper-division (except PS 205) and must contribute to the student's understanding of the area of the *foreign language* being studied. An approved area study course list for languages offered at PSU is available in the Undergraduate Programs Office, 240 SBA. Permission to take an area study course *not* found on the approved list can be received from the director of international programs.

Food Industry Management Certificate

The Food Industry Management Certificate provides undergraduate students with an educational foundation in the field of food distribution, marketing, and management. Certificate requirements include the study of the overall competitive business marketplace of the food industry from a cross-industry perspective, consumer trends, trade relationships, supply and logistics issues, retailing and distribution, electronic commerce, and industry practicum.

Students are required to gain admission to the School of Business Administration through the regular admission process and must complete degree requirements specified for a business administration major. In addition, students must complete all certificate requirements specified below:

Business core

BA 101, 205, 211, 213, 301, 302, 303, 311, 325, 339, 385, 495

Food industry management requirements

Mktg 435 Competing in the Food Industry (4)

ISQA 458 Purchasing and Logistics Within the Food Industry (4)

Mktg 475 Retailing (4)

Mktg 409 Food Industry Practicum (4)

4 hours of directed electives, selected with the faculty adviser's approval.

Business option requirements

Choose from: Accounting, Finance, Real Estate Finance, General Management, Human Resource Management, Information Systems, Advertising Management, Marketing, and Supply and Logistics Management.

Postbaccalaureate Accounting Certificate

The Postbaccalaureate Accounting Certificate is a program for students who have earned one or more baccalaureate degrees and who wish to complete the coursework to prepare for the Certified

Public Accountant (CPA) examination. These recommendations include courses in accounting directly related to preparation for the exam as well as professional preparation for public or industry accounting. In addition, courses are recommended in law, basic business, and in other related areas for those whose undergraduate degree is not in business administration.

Students may bring photocopies of their undergraduate transcripts to the Undergraduate Programs Office (240 SBA) for an evaluation of the prerequisite courses to the program.

Application criteria. The following requirements must be fulfilled prior to applying:

1. Have earned a baccalaureate degree recognized by the PSU Office of Admissions, Registration and Records.
2. Be formally admitted as a postbaccalaureate student at PSU.
3. Have completed the following pre-business courses with a grade of C- or better:

- BA 101 Introduction to Business and World Affairs
- BA 211 Fundamentals of Financial Accounting
- BA 213 Decision Making with Accounting Information
- Stat 243, 244 Statistics I and II (for business majors)
- Ec 201 Principles of Economics (micro)
- Ec 202 Principles of Economics (macro)
- 4. Have a grade point average (GPA) of at least 2.75 for each of the following:
 - a. all accepted transfer credits
 - b. all PSU graded credits
 - c. all PSU graded business credits

Students who do not meet the 2.75 GPA requirements will be considered for admission only if the GPA for their most recent 12 graded credit hours at PSU is 3.00 or higher and the applicant has a minimum 2.50 cumulative PSU GPA and a minimum 2.50 cumulative GPA for all completed business courses at PSU.

Core

Actg 335 Accounting Information Systems.....	4
Actg 360 Management Accounting	4
Actg 381, 382 Financial Accounting and Reporting8	8
Actg 421 Introduction to Taxation	4
Actg 430 Governmental and Not-for-Profit Accounting	1
Actg 492 Auditing Concepts and Practices	4
Actg 495 Integrated Accounting Issues.....	4
Additional credits chosen from:	11-12
Actg 422 Advanced Taxation	
Actg 460 Advanced Managerial Accounting	
Actg 476 International Accounting	
Actg 485 Business Law	
Actg 490 Advanced Financial Accounting and Reporting	
Actg 493 Advanced Auditing	

Total required accounting core 40-41

Other required credits

BA 303 Business Finance.....	4
BA 325 Competing with Information Technology..4	4
Total required credits	48-49

At least 30 credits required for the certificate and at least 27 of the credits in accounting must be taken in residence at Portland State University. Candidates must achieve at least a grade of C- in each course presented for the certificate. Entrance and exit GPA requirements are the same as for the School of Business Administration undergraduate program. For retention in the program, grade point averages will be based only on coursework taken in the certificate program.

Postbaccalaureate students who do not hold a degree from a university where the language of instruction is English must satisfy the Wr 323 requirement before completion of a certificate program.

Graduate programs

The School of Business Administration offers three programs leading to master's degrees:

Master of Business Administration. Master of Business Administration is an integrated graduate program focused on leadership development and management innovation. Students master basic technical skills and a series of management competencies, and apply them to real world experiences. The curriculum emphasizes the pioneering innovative values of the Northwest. It is designed to accommodate students with business and non-business degrees and is best suited for those who have gained at least two years of industry experience prior to their admission date.

In addition, a graduate certificate in food marketing and logistics is available in conjunction with the M.B.A. See the Graduate Studies section of the Bulletin for more information.

Online MBA program. The PSU Online MBA program is designed specifically for busy professionals and for students who live outside of the Portland area. This program combines the latest in educational and distance technologies with occasional on-campus residencies. Most of the coursework is accessible via the Web. Short, intensive weekend residencies are required three or four times per year. Electives may be taken from an approved list of courses available online or courses offered on campus. For more information, contact 503-725-8001.

Master of Science in financial analysis. The Master of Science in financial analysis (M.S.) is a 49-quarter credit hour program aimed at individuals who seek graduate-level specialization in financial analysis, but who do not wish to pursue an M.B.A. The M.S. fills the need for business profes-

sionals seeking an in-depth level of expertise in the area of financial analysis as well as accounting students seeking to sit for the CPA Exam. The curriculum is designed to develop forward-thinking professionals with sharp analytic minds, effective communication skills, and the necessary vision to apply financial analysis skills in a wide variety of business situations.

Master of International Management. A PSU M.I.M. degree is for those who want to be leaders in the international business arena. The M.I.M. program provides students with international as well as general business skills, proficiency in a foreign language, and a deep knowledge of political and economic environments in which global business leaders work, all gained while working with a culturally diverse group of students from around the world. The M.I.M. degree is for those who want the skills to be successful in the fast-paced global business environment and have a particular interest in working in the Asia Pacific region.

The School of Business Administration also participates in the System Science Doctoral Program and the Oregon Executive M.B.A. (OEMBA).

Application requirements

Master of Business Administration and Master of Science in financial analysis.

To be considered for admission to the M.B.A. or M.S. program, the student must have a baccalaureate degree from an accredited institution. A cumulative undergraduate GPA of 2.75 is expected. Typically, students with a GPA less than 2.75 will need to complete 12 graduate credits with a GPA of 3.00 or higher.

Applicants to the M.B.A. or M.S. in financial analysis program must take the Graduate Management Admission Test (GMAT) and have test results sent to the School of Business Administration's Graduate Programs Office. A minimum GMAT total score of 470 is required, plus a score of at least 35 percent in both the verbal and quantitative sections is expected. Although a minimum GMAT score of 470 is required, admission is competitive. Students must also submit two recommendations, a one-page personal statement, and résumé with their applications. In most cases an interview may be required and the applicant will be notified.

M.S. in financial analysis applicants are expected to have a bachelor's degree in business or economics. Students with a non-business undergraduate degree, interested in pursuing an M.S. in financial analysis will need to complete the busi-

ness courses listed on our website. Successful completion of a course sequence in intermediate accounting and an introductory course in business finance is also required, and all students should exhibit proficiency in computer applications and spreadsheet skills.

One application packet including all documentation must be submitted to the Office of Admissions and a second complete packet including official transcripts and a completed application must be submitted to the School of Business Administration, Graduate Programs Office, P.O. Box 751, Portland, OR 97207-0751; 503-725-8001 or toll-free 1-800-547-8887. The School of Business Administration applications can be found by visiting <https://www.webapp.sba.pdx.edu/onlineapplication.htm>.

International applicants also are required to demonstrate proficiency in English by taking the Test of English as a Foreign Language (TOEFL or IELTS). A TOEFL score of 213 on the computer-based test or 79 on the Internet-based or a score of 7 on the IELTS is required for all students whose native language is not English and who have not received a baccalaureate degree from an accredited institution in the United States. Official TOEFL or IELTS scores must be sent directly to the PSU Office of Admissions, Registration and Records.

Only those students who have been formally admitted to the M.B.A., M.I.M., M.S., or Systems Science Ph.D. programs may take graduate level courses in the School of Business Administration. Students formally admitted and in good standing in other graduate programs may take courses on a space available basis with the recommendation of their program adviser or the approval of the associate dean of academic affairs in the School of Business Administration.

Master of International Management. The Master of International Management degree is granted by Portland State University. Therefore, each applicant is required to meet the admission requirements of the M.I.M. program and Portland State University. Except for TOEFL scores, which are sent directly to PSU from the Educational Testing Center (ETS), applicants will submit one completed application packet directly to the M.I.M. program. GMAT and GRE scores should be included.

The deadline for submitting applications and supporting documents for both the full-time and part-time programs is April 30. GMAT should be taken no later than March. Applications to the M.I.M. program will be accepted until these deadlines. However, admission is on a rolling basis beginning in January. Applicants are encouraged to apply as early as possible.

When the M.I.M. admission committee agrees that a candidate has sufficiently demonstrated the abilities necessary to successfully complete the M.I.M. program, a conditional letter of acceptance will be sent. The total process may take as long as 12 weeks; therefore, applicants are strongly encouraged to apply early.

Admission requirements

Priority Dates for Fall Admission. Application and all supporting documents:

International applicants—March 1

Domestic applicants—April 1

GMAT taken by previous February

Applications for the part-time MBA are accepted until August 15.

There may be support materials other than transcripts, GMAT score, recommendations, personal statement, and resume required for admission in future quarters; prospective applicants should contact the Graduate Programs Office, 503-725-8001, toll-free 1-800-547-8887, for the most current admissions requirements.

Master of Business Administration.

Students may elect to complete the M.B.A. program in either the full-time day, part-time, or the evening format. For the most part, students are expected to progress through the program with their assigned cohort and follow the proposed schedule of classes. Full-time day students will have to take some elective coursework during the evenings or weekends. Students are admitted in fall term only. There is no admission in the winter, spring, or summer terms.

One of the fall cohorts is offered in Washington County at the CAPITAL Center. A student in this cohort will be able to complete all core courses (with the exception of BA 531) at the center.

Electives are offered at the PSU campus. Another fall cohort is the online M.B.A. All courses can be completed online and will result in a general M.B.A. Four on-campus residencies are required each year.

Master of Science in financial analysis.

Students may take courses on a full-time (12 credits) or part-time (8 credits) schedule, and an undergraduate degree. Students with a non-business undergraduate degree, interested in pursuing an M.S. will need to complete the business courses listed on our Web site. Successful completion of a course sequence in intermediate accounting and an introductory course in business finance is also required, and all students should exhibit proficiency in computer applications and spreadsheet skills. M.S. students are admitted fall term only.

Master of International Management.

To be admitted to this program the student must complete the following:

1. Applicants must have a four year undergraduate degree from an accredited institution, or its equivalent, with a grade point average (GPA) of 2.75 or better.
2. A minimum GMAT score of 470, or a minimum GRE score of 1500.
3. Successful completion of M.I.M. pre-requisite courses:
 - ◆ Managerial and Financial Accounting
 - ◆ Micro and Macro Economics
 - ◆ Business Finance
 - ◆ Statistics
4. Two to three years of business or professional experience is preferred, but not required.
5. International students (whose native language is not English and have not received a degree from an accredited U.S. institution) must also have:
 - ◆ A minimum TOEFL score of 550 (paper-based test) or 213 (computer-based test)
 - ◆ Financial certification

Degree requirements

University master's degree requirements are listed on page 70. In addition, the student must fulfill School and program requirements. Students entering the M.B.A. program are expected to know introductory calculus and be microcomputer literate (familiar with word processing, presentation, spread sheet, and database software) no later than the end of the first term of admission. Contact the School of Business Administration's Graduate Programs Office directly (503) 725-8001. For the most current program information, see our website at www.mba.pdx.edu.

Master of Business Administration. The goal of the M.B.A. program is to develop highly effective managers and leaders. This requires the program to develop students' expertise in the technical areas of business, develop a student's managerial competencies, and develop a student's ability to integrate this technical expertise with managerial competencies to become an effective leader within organizations. The underlying themes within the program are the role of innovation and creativity to organizations and an understanding of the challenges and opportunities of the global environment. The coursework within the M.B.A. program can be grouped into four segments: foundation skills, business disciplines, integration, and specialization/electives.

Foundation skills. (19 credits)

The foundation segment has two components, business perspective and leadership development. The business perspective provides students with an integrated understanding of the global and competitive challenges facing business today. The role of innovation and creativity is emphasized.

Foundation: Business Perspective

Mktg 511 Pioneering Innovation (4)
 Fin 514 Economic Environment of the Firm (4)
 BA 561 Law for Managers (2)
 Mgmt 560 Ethics in Organizations (2)

The leadership development component provides students with the necessary background and support to develop into an effective manager and leader.

Foundation: Leadership Development

BA 508 Leadership Development and Assessment (2)
 ISQA 511 Managerial Decision Making (4)
 BA 531 Executive Briefings (1)

Business disciplines. (26 credits)

Discipline courses build on the integrated foundation coursework and provide more in-depth knowledge and applied skills related to accounting, information systems, finance, management, marketing, and operations. The role of innovation and the global environment is fused throughout these courses. In addition, the student will be provided the opportunity to develop their managerial competencies.

Actg 511 Financial Reporting (4)
 Actg 512 Managerial Accounting and Control (2)
 Mktg 544 Marketing Research and Strategy (4)
 Mgmt 550 Organizational Management (4)
 Fin 561 Financial Management (4)
 ISQA 551 Managing Information Technology (4)
 ISQA 552 Managing Operations and the Value Chain (4)

Integrated applications. (11 credits)

Application courses formally address the systematic integration across all of the business disciplines. This occurs in case studies as well as "real world" business projects. In addition the student is provided opportunities to apply their managerial competencies.

Mgmt 562 Business Strategy Capstone (4)
 BA 509 Leadership Immersion (1)
 BA 506 Business Project (6)

Students may be eligible for waiver of some required courses in the MBA program. A waiver is based upon the student holding an undergraduate major in the specific business discipline for which the waiver is sought. Specifically, Actg 511, Actg 512, Fin 514, Fin 561, ISQA 511, ISQA 551, ISQA 552, Mktg 544, BA 561 or Mgmt 550 may be considered for waiver. A student can waive a maximum of 12 credit hours from the courses listed above only, thus reducing the required number of hours in the degree program to 60 credit hours.

Specialization/electives. (16 credits)

Each student will select elective coursework to complete the M.B.A. program. A maximum of 8 credits of electives may be 400/500 level coursework taken for graduate credit. Electives will be selected from courses offered by the School of Business Administration or may, with the approval of the director of graduate programs, be selected from areas outside business administration. Electives are an opportunity to develop an area of specialization within the M.B.A. program.

Management of Innovation and Technology (MIT) option

The MIT option allows students to target elective credits in the M.B.A. program to acquire substantial knowledge in technology management. The MIT option brings together functional areas such as information systems, operations management, product innovation, accounting, marketing, and sales within the context of technology firms. The goal is to equip students with knowledge about strategies for managing all phases of the development process, from product innovation through the implementation and commercialization of the new idea.

The MIT option requires that students take the 16 credits of electives in the M.B.A. program from a specified list of courses, and that the business project be completed with an MIT focus. Students completing the technology course requirements, in addition to the M.B.A. core requirements, will receive an M.B.A. degree with special designation of the management of innovation and technology option. The MIT option is in transition. Please refer to the SBA website (www.SBA.pdx.edu) for the most current course offerings for this option.

Alternative technology courses may be used toward the MIT with approval from the director of academic programs in Business Administration.

Finance option

The finance option offered in conjunction with the M.B.A. creates an opportunity to develop a specialized skill set within the finance area. This option provides students the skills to understand complex financial issues as well as experience in the application of financial tools that facilitate problem solving.

The finance option requires that students take the 16 credits of electives in the M.B.A. program from a specified list of courses, and that the business project be completed with a finance focus. Students must take 8 credits of required finance courses and 8 credits of specified finance electives. Students completing the finance option course requirements, in addition to the M.B.A. core requirements, will receive an M.B.A. degree with a finance option. This option is currently in transition. Please refer to the SBA website (www.SBA.pdx.edu) for the most current course offerings for this option.

International Business Option

The international business (IB) option in the M.B.A. program provides an avenue to M.B.A. students who are interested in international careers but do not wish to pursue an M.I.M. degree. All students electing this option will have a grounding in the con-

temporary world affairs that affect business and in the organizational issues facing firms operating in the global arena.

The IB option requires that students take the 16 credit hours of electives in the M.B.A. program from a specified list of courses, and that the business project be completed with an international focus. Students must take 6 hours of required M.I.M. courses and 10 hours of specified international electives. Students completing the IB option course requirements, in addition to the M.B.A. core requirements, will receive an M.B.A. degree with an international business option. There is no language requirement for M.B.A.-IB option students. This option is currently in transition. Please refer to the SBA website (www.SBA.pdx.edu) for the most current course listings for this option.

Master of Science in financial analysis. Successful completion of the M.S. in financial analysis requires 11 credits of business, 30 credits of financial analysis, and 8 credits of electives.

Credit

Business11

- † BA 506 MSFA Business Project (6)
- BA 531 Executive Briefings (1)
- Mgmt 562 Business Strategy and Policy (4)

Financial analysis core30

- Actg 542 Tax Factors in Business Decisions (4)*
- Actg 551 Accounting Information Systems (4)*
- Actg 552 Strategic Cost Management (4)
- Actg 553 Financial Statement Analysis (4)
- Actg 560 Professional Ethics and Public Interest (2)
- Fin 551 Financial Management for Financial Analysts (4)
- Fin 553 Financial Analysis and Business Valuation (4)
- Fin 555 Applied Econometrics for Financial Analysis (4)

Financial Analysis Electives

Select two of the following courses8

- Actg 585S Business Law (4)
- Fin 545 Hedging and Risk Management (4)
- Fin 552S Investments (4)
- Fin 556S International Financial Management (4)
- Fin 562 Intermediate Financial Management (4)
- Fin 565 Cases in Corporate Financial Management (4)
- Fin 573 Investment Analysis and Portfolio Management (4)
- Fin 574 Investment Analysis and Portfolio Management (2)
- Mktg 555 Technology Marketing (4)
- Actg 525 Tax Research Methods (4)
- Actg 527 Corporate Taxation (4)
- Actg 593S Advanced Auditing (4)

Other courses including study abroad as approved by the director academic programs in consultation with the SBA's Graduate Program Committee.

Master of International Management. The M.I.M. program offers a 12-month full-time or 24-month part-time class format and an intense learning experience reflective of international business today. The M.I.M. degree focuses on Asian busi-

ness, with particular emphasis on China and Japan. A three-week field study trip to Asia is an integral part of the program, as is the international business consulting capstone project. The M.I.M. program strives to create a strong cross-cultural learning community through a cohort structure that helps students to build team skills, beginning with a four-day outdoor wilderness excursion for all students during orientation week.

Faculty for the M.I.M. program are drawn from Portland State University, University of Oregon, Oregon State University, and other U.S. and foreign universities, as well as selected business executives. All classes are held at PSU's main campus.

Specialization options. In response to the growing corporate demand for specialized skills, the M.I.M. department now offers specialization tracks. Students can acquire in-depth knowledge in one of three key management areas: global business and sustainability, global marketing, or global supply chain management. General M.I.M. requirements include 65 core program credits plus the language requirement. Students that specialize must complete 73 credits plus the language requirement. Furthermore, students that specialize will produce the international business project in their chosen area of specialization and complete an additional 8-week term (August to October) to satisfy the extra course requirements.

MIM requirements. In addition to meeting the requirements for PSU and the School of Business Administration, we also require applicants to complete the following prerequisite courses with a C or better: Managerial and Financial Accounting, Micro and Macro Economics, Business Finance, Statistics

These prerequisite courses must be completed successfully prior to enrolling in the M.I.M. program. The admissions committee evaluates each student's application to determine which courses (if any) are required. Applicants can complete these prerequisites at any community college or university, or through the M.I.M. prerequisite program. The M.I.M. prerequisite program is an eight-week program (June-August), developed for students with limited (or no) academic business background.

Exceptions to the above will be considered on a case-by-case basis by the Master of International Management Admissions Committee.

Transfer credits and course waivers.

Since the Master of International Management program is a cohort program, no transfer credits will be accepted nor will there be any course substitutions or waivers.

† Students who complete the 8 credit National Student Advertising Competition are exempt from the Marketing elective requirement.

* These courses may be replaced with elective coursework based on previous academic preparation.

Grading. Students must maintain a cumulative GPA of at least 3.00 for all graduate credits earned in the Master of International Management program.

Language requirement. The language component of the M.I.M. is designed to prepare participants for the international business environment of Asia. The goal is to create a comfort level in the target language, Chinese or Japanese, such that the participant understands business etiquette and can function socially. The primary skills emphasized will be listening, followed by speaking, reading, and writing. The content of the language will focus on business and social situations, focusing on relevant vocabulary.

Field study in China and Japan. As a capstone experience, students will travel to China and Japan to visit companies, meet with international business executives, and learn more about these cultures. This trip allows students the opportunity to immerse themselves in the culture and lifestyle of two very different countries, while gathering firsthand information for their final project.

Admissions. We have fall admission only. Our application deadline is April 30. Please submit all application materials to the M.I.M. Program.

Program schedule

Typical full-time

Term 1: MIM 511, MIM 513, MIM 516, MIM 578, Language
 Term 2: MIM 515, MIM 517, MIM 564, MIM 576, Language
 Term 3: MIM 558, MIM 519, MIM 568, MIM 576, Language
 Interim: MIM 579 Field Study Trip
 Term 4: MIM 510, MIM 547, MIM 574, Elective/Specialization, Language
 Term 5: MIM 577, MIM 578, Elective/Specialization, Language
 Term 6: MIM 579 International Business Project

Typical part-time

Term 1: MIM 511, MIM 516, MIM 578
 Term 2: MIM 515, MIM 517, MIM 576
 Term 3: MIM 558, MIM 568
 Term 4: MIM 574, Elective/Specialization
 Term 5: MIM 577, Elective/Specialization
 Term 6: Break
 Term 7: MIM 513, Language
 Term 8: MIM 564, Language
 Term 9: MIM 519, MIM 576, Language
 Interim: MIM 579 Field Study Trip
 Term 10: MIM 510, MIM 547, Language
 Term 11: MIM 578, Specialization Language
 Term 12: MIM 579 International Business Project

Specialization (Elective) Courses

Global Business and Sustainability: MIM 511, MIM 521, MIM 531, MIM 541
 Global Supply Chain Management: MIM 524, MIM 534, MIM 544, MIM 558
 Global Marketing: MIM 515, MIM 535, MIM 545, MIM 575

Doctor of Philosophy in systems science—business administration. The Systems Science Doctoral Program prepares students for academic or professional careers in systems concepts and techniques. The School of Business Administration participates in the Systems Science Doctoral Program.

There are two options for study in the systems science program. Both options facilitate the design of curricula which are individually tailored to the needs and interests of students. Students may earn the M.B.A. and the systems science Ph.D. concurrently and should anticipate approximately four to five years of full-time study beyond the baccalaureate degree in order to satisfy the program requirements.

Departmental option: The student undertakes advanced academic preparation primarily in a single department or school. In the School of Business Administration, students concentrate their coursework in one department or subject area and take courses from other departments as well.

Core option: The student pursues interdisciplinary studies with a stronger emphasis on systems coursework.

For information relating to the Ph.D. program in systems science, see page 75.

Courses

Accounting

Courses with an asterisk () are not offered every year.*

For information on the accounting option requirements, see page 203. All 300- and 400-level courses require junior-level standing; 400-level courses require admission to the School of Business Administration; graduate courses require admission to the graduate programs. Students admitted to the School of Business Administration will be given registration priority for all 300-level courses.

**Actg 199
 Special Studies (Credit to be arranged.)**

**Actg 310
 Professional Accounting Seminar (2)**
 Designed to introduce students to a wide range of accounting careers. Guest speakers from public accounting firms, private industry, and governmental agencies will provide information and discuss various career paths within their organizations. In addition, information on how to find and get the "right" job will be provided. Pass/no pass only. Prerequisites: B or better in both BA 211 and 213 or consent of instructor.

**Actg 335
 Accounting Information Systems (4)**

Methodology used in manual and computer systems for the accumulation, classification, processing, analysis, and communication of accounting data. Development of the accounting techniques used in the handling of large amounts of information; special journals and controlling accounts; computer files for storing data; computer processing of data. Discussion of the problems encountered in the systems for different types of organizations. Prerequisites: BA 213, BA 325.

**Actg 360
 Management Accounting (4)**

Emphasis on the development, analysis, and communication of cost information relevant to

the following functions: planning, decision making, cost control and management, pricing, and performance evaluation. Prerequisite: BA 213.

**Actg 381, 382
 Financial Accounting and Reporting I and II (4, 4)**

Comprehensive study of the principles, conventions, and postulates of accounting. The issues of revenue recognition and the measurement and disclosure of financial information are studied in detail. Although the courses are taught from the perspective of the preparer, attention will be paid to the information requirements and expectations of users of financial statements. International accounting issues are also covered. Prerequisites: BA 213 for Actg 381; Actg 381 for Actg 382.

**Actg 399
 Special Studies (Credit to be arranged.)**

**Actg 401/501
 Research (Credit to be arranged.)**

**Actg 404/504
 Internship (Credit to be arranged.)**

**Actg 405/505
 Reading and Conference (Credit to be arranged.)**

Consent of instructor.

**Actg 407/507
 Seminar (Credit to be arranged.)**

Student-selected problems in business operation and business management to be studied by the individual and discussed in group meeting under direction of academic staff.

**Actg 409/509
 Practicum (Credit to be arranged.)**

**Actg 421
 Introduction to Taxation (4)**

Introduces students to a broad range of tax concepts, tax policies, and different types of taxpayers. Students should develop an understanding of how tax laws affect most business and personal financial decisions. Tax reporting, tax planning, and basic tax research skills will be emphasized. Prerequisite: BA 213.

**Actg 422/522
 Advanced Taxation (4)**

Expands students' knowledge of how tax laws affect sole proprietors, partnerships, corporations, and other business entities. In addition, the tax laws applicable to estates, gifts, trusts, tax exempt organizations, and foreign persons are explored. Prerequisites: Actg 421.

**Actg 430
 Governmental and Not-for-Profit Accounting (1)**

An introduction to governmental and "fund" accounting. Topics include state and local governmental funds and accounting for not-for-profit hospitals, universities, and health/welfare organizations. Prerequisite: Actg 382.

**Actg 460
 Advanced Managerial Accounting (4)**
 Advanced development, analysis, and communication of cost information, focusing on the use of financial and non-financial information in decision making and strategic management.

Cases and/or simulations will be used extensively. Prerequisites: Actg 360 and BA 339. (BA 339 not required for students in postbaccalaureate certificate in accounting program)

**Actg 476/576
International Accounting (4)**

International accounting issues crucial for effective interpretation and understanding of international business. Framework to analyze and understand financial reports used by multinational corporations (MNCs). Special managerial and control problems of MNCs including performance evaluation, transfer pricing, and taxation. Prerequisites: BA 213 for Actg 476; Actg 511 for Actg 576.

**Actg 485/585
Business Law (4)**

Laws of contracts, negotiable checks, notes, and drafts, insurance, documents of title, sales of goods, letters of credit, employees and independent contractors, agency, partnership, corporations, securities, bankruptcy, security interests, mortgages, suretyship and bulk sales. Covers law part of CPA exam. Prerequisite: Fin 226 or BA 385 (Fin 226 or BA 385 not required for students in postbaccalaureate certificate in accounting program) or Mgmt 560.

**Actg 490
Advanced Financial Accounting (3)**

Emphasizes accounting for business combinations. In addition, accounting issues related to partnerships and foreign currency translation and transactions are studied. Prerequisite: Actg 382.

**Actg 492/592
Auditing Concepts and Practices (4)**

Auditing standards and procedures observed by Certified Public Accountants in the examination of the financial statements of business and other organizations. Audit standards and objectives and conceptual framework for collection of evidence and assessment of control risk. Short-form audit report and operational auditing. Prerequisites: Actg 335 and 382.

**Actg 493/593
Advanced Auditing (4)**

Audit objectives and procedures for the collection of evidence and the assessment of control risk are explored. The effects of attribute and variables sampling as well as the effects of computers and computer-control procedures on the audit process are examined. In addition, audit, compilation, and review reports are important elements of this course. Prerequisites: Actg 492.

**Actg 495
Integrated Accounting Issues (4)**

Integrates topics from various accounting areas. Provides students with opportunities to see the accounting interactions and tradeoffs that result from realistic business situations. Course will enhance students' understanding of accounting and its influence on business, as well as the understanding of how business processes affect accounting results, through a set of comprehensive case studies. Prerequisites: Actg 360, 421, 492.

**Actg 503
Thesis (Credit to be arranged.)**

**Actg 511
Financial Accounting (4)**

An introduction to the reporting system used by businesses to convey financial information to parties external to the enterprise. Primary emphasis is placed on understanding the financial reports that are the end product of this system—what they do and do not tell the user about a business enterprise. The accounting principles, conventions, and concepts underlying financial reporting are examined with the objective of developing the ability to read, comprehend, and perform a basic analysis of financial statements. In addition, an introduction to corporate social responsibility and environment performance reporting will be provided.

**Actg 512
Managerial Accounting and Control (2)**

Covers traditional managerial accounting issues, including operational budgeting and cash flow analysis. In addition, the course will consider financial models used in analyzing the economic viability of new product and services and emerging trends in internalizing ecological 'externalities.'

***Actg 525
Tax Research Methods (3)**

Methods of researching tax rulings and laws in tax accounting; study of the administration and responsibilities of tax practice. Prerequisite: Actg 482.

***Actg 527
Corporate Formation and Nonliquidating Distribution (Corporate Taxation I) (3)**

Concepts and principles governing the taxation of corporations and their shareholders including the effects of taxes on corporate capital structure and distributions. Prerequisite: Actg 525.

***Actg 529
Tax Planning (3)**

An integrating course that relates business taxation, estate planning, employee compensation and tax shelters as they may interact with each other; the format is discussion of case problems and includes client consultation matters. (This course should be taken after the student completes 24 credits in the program.)

***Actg 531
Partnership Taxation (3)**

Tax treatment of partnership income; problems associated with the formation, operation, and dissolution of partnerships. Sale, withdrawal, retirement of partners; basic adjustments, unrealized receivables, and substantially appreciated inventory; Subchapter S Corporation compared to partnerships. Prerequisite: Actg 525.

***Actg 532
Corporate Reorganizations and Liquidations (Corporate Taxation II) (3)**

An examination of the effect of taxes on reorganizations and liquidations. (May be taken prior to Corporate Taxation I.) Prerequisite: Actg 525.

***Actg 534
Federal and State Tax Procedures (3)**

Tax reporting and collection procedures; administrative and judicial procedures governing tax controversies, the rights and obligations of the taxpayer. Prerequisite: Actg 525.

***Actg 535
State and Local Taxation (3)**

Examination of issues and taxation other than federal income tax, including property tax processes, sales and use taxes, multistate transactions, manufacturers excise tax, and sumptuary and regulatory excise taxes. Prerequisite: Actg 525.

***Actg 536
International Taxation (3)**

Taxation of United States citizens and businesses on foreign-source income; topics include the forms of multinational operations, foreign tax credits, and tax treaties. Prerequisite: Actg 525.

***Actg 537
Tax Accounting Problems (3)**

A study of tax accounting methods, reporting periods, special elections, and consolidated returns. Prerequisite: Actg 525.

***Actg 539
Estate and Gift Taxation (3)**

An exploration of the United States system of taxing transfers by gift or at death. Incorporates a review of the technical structure to enable the student to understand the role a particular rule does or should perform in a transfer tax system. Designed to enhance comprehension of both theoretical aspects and estate planning, in addition to the structural framework. Prerequisite: Actg 525.

***Actg 542
Tax Factors in Business Decisions (4)**

Tax implications of common business questions and transactions, including choices of business entity, acquisition and sale of business assets, compensation and benefits planning, and U.S. taxation of international trade. Students will be exposed to the common income and estate tax planning strategies of individuals and families engaged in business. Prerequisite: Actg 512 or admission to the Master's of Science in financial analysis program.

***Actg 550
Advanced Financial Reporting (4)**

Financial reporting for general M.B.A. student. Studies of the accounting valuation process, accounting income measurement, and financial disclosure. Contemporary issues are examined in the context of factors that shape accounting standards and current trends in financial reporting. Prerequisite: Actg 511.

**Actg 551
Accounting Information Systems (4)**

Study of accounting information systems for operations with an emphasis on accounting issues. Addresses the information systems issues encountered by internal financial analysts. Topics may include database and accounting information system design, model building, the use of accounting information for forecasting,

and other topics associated with the development of information systems to support financial analysis.

Actg 552

Strategic Cost Management (4)

Course takes the perspective that managers should not use information from accounting systems designed to prepare external financial reports in order to make internal management decisions. Provides alternative approaches to developing and using accounting information. Special emphasis will be placed on understanding traditional cost systems, activity-based costing systems, and determining the cost of quality. Course will rely heavily on the examination of actual company situations. Prerequisite: Actg 512 or admission to the Master's of Science in financial analysis program.

Actg 553

Financial Statement Analysis (4)

Sound financial information for making business decisions is obtained by an understanding of accounting data from which the information is derived as well as by the application of tools of analysis. Students will gain an increased understanding of the properties and use of accounting numbers in the determination and forecasting of financial positions, results of operations, cash flows, the financial disclosure process, and its use in comparing business performance. Prerequisite: Fin 551 or 561.

Actg 560

Professional Ethics and the Public Interest (2)

Introduces students to ethical perspectives that provide the philosophical context for the study of applied business ethics. Students use practical frameworks to address complex ethical and social issues and explore organizational processes and structures that can shape social performances. The context for this course is financial and accounting situations.

Actg 601

Research (Credit to be arranged.)

Actg 607

Seminar (Credit to be arranged.)

Business Administration

All 300- and 400-level courses require junior-level standing; 400-level courses require admission to the School of Business Administration; graduate courses require admission to the graduate programs. Students admitted to the School of Business Administration will be given registration priority for all 300-level courses, except business minor courses.

BA 101

Introduction to Business and World Affairs (4)

Introduction to the business firm operating in the local, national, and global marketplace. Emphasizes the integration of the various functional areas of business as the firm evolves from its entrepreneurial origins to a mature corporation.

BA 205

Business Communications Using Technology (4)

Provides students with the tools that are needed to collect, organize, and present information in a business environment. Students will learn how to use library and Internet resources to collect information. Word processing, spreadsheet, and graphics applications will be used to organize and present business information. Students will be introduced to business report writing, developing and delivering a persuasive presentation, and electronic-mail methods for team-based communication. Prerequisite: BA 101.

BA 211

Fundamentals of Financial Accounting (4)

Assists students in developing an understanding of financial statements and the tools used by external users such as lenders, shareholders, and competitors to evaluate the performance of the firm. Balance sheets, income statements, statements of cash flows, and industry reports will be used to introduce topics such as: assessing risk, liquidity, solvency, operating efficiency, and profitability of the firm. Prerequisite: BA 101.

BA 213

Decision Making with Accounting Information (4)

Designed to aid students in developing effective decision making skills. Course elements include: understanding the organization as a system, information assessment, cash management, operations and capital budgeting, manufacturing cost systems, cost control procedures, managing inventory, problem solving, and measuring the health of the organization. Prerequisite: BA 211.

BA 301

Research and Analysis of Business Problems (4)

Development and use of business tools and techniques as applied to business problems. Students will identify business problems, articulate the issues, research, develop, and evaluate solution alternatives relevant to the problem, and present the results orally and in writing. Students will integrate and reinforce their skills in logical and analytical processing, critical thinking, and communication. Prerequisite: BA 205 and junior standing.

BA 302

Organizational Behavior (4)

Focuses on issues that are relevant to the three levels of organizational behavior (i.e., individual, group, and organizational). Key topics include: the nature and dynamics of teams, personal values and employee job attitudes, communication, conflict resolution, motivation, leadership, decision making, employee effectiveness, and the impact of organizational level issues such as policies, structure, design, and culture. Techniques used to facilitate learning may include role plays, cases, presentations, organizational simulations, teamwork, and/or term research papers. Prerequisite: BA 205 and junior standing.

BA 303

Business Finance (4)

Development and study of a decision framework for financial management with special emphasis on small- and medium-sized businesses. Topics include analysis of financial health, planning for future financial performance, evaluation of investment opportunities, and analyses of risk. Financing of firm growth and valuation will be introduced. An integration of the concepts of financial management into a total system approach to business decision making will be facilitated with the use of cases, as appropriate. Prerequisite: BA 205, 211, and junior standing.

†BA 306

Working with Money for Business Minors (4)

Essential topics in accounting and finance for business minors. Reading and interpreting income statements and balance sheets, especially for small businesses. Forecasting to determine financing requirements. Use of techniques in time value of money to determine present values, loan payments, etc. Sources of business financing.

BA 311

Marketing Management (4)

Basic marketing concepts from the perspective of the marketing manager. Key focus is to examine the marketing planning and analysis necessary to develop sound marketing plans and strategies. Specific topics include the role of marketing within the firm, analysis of marketing opportunities, selection of target markets and market segmentation, marketing strategies in a global marketplace, use of technology in marketing, and marketing mix decisions. Experiential learning approaches for class participation will be used. Prerequisites: BA 205 and junior standing.

†BA 316

Working with Customers for Business Minors (4)

Essential topics in marketing for business minors. Students will be introduced to the basic concepts of marketing and customer satisfaction. Students will explore primary considerations of the market environment and marketing practices including price, promotion, distribution, and product in an applied setting.

BA 325

Competing with Information Technology (4)

Presents the key steps required to gain a competitive advantage in the marketplace through the use of information technologies. Primary focus is to help students understand the information systems development lifecycle and the ways that systems can support functional areas of a business. Other topics include: communication technologies to support groups, productivity software and applications, designing systems for competitive advantage, and systems reengineering. Prerequisites: BA 205 and junior standing.

†BA 326

Working with People for Business Minors (4)

Essential topics in management and business communications. Focuses on the management

† Courses in the minor may not be used to satisfy major requirements, except for BA 101.

of business organizations in an applied setting. Key topics include motivating and leading individuals and groups, working effectively in teams, and conflict management. In addition, students will learn to collect, organize, and present information in a business setting.

†BA 336

Working with Information for Business Minors (4)

Discusses the importance of information and its support of a business organization. An understanding of the essential relationships among information, business process, and information technology. This is a survey course.

BA 339

Operations and Quality Management (4)

Develops an understanding of the various issues and strategies involved in the operation of a service or manufacturing organization. These considerations include the support by the operation's organization of corporate strategy through design and operating decisions. Issues such as global supply sources, worldwide business system influences, continuous improvement, and total quality management will be discussed. Prerequisite: BA 205 and junior standing.

BA 346

Working as an Entrepreneur for Business Minors (4)

Capstone course in the business minor. Provides the student an opportunity to link previous coursework in the development of business plans and organizations, with specific emphasis on the challenges of small emerging organizations. Project-based course that provides students with a toolbox of applied skills. Prerequisite: BA 101.

BA 385

Business Environment (4)

Study and critical analysis of the role of business in its environment with special references to the interrelationships of legal, technological, economic, political, and social forces with the business enterprise and to the legal and ethical obligations of the business enterprise with its owners, employees, consumers, and society. Prerequisites: BA 205 and junior standing.

BA 407/507

Seminar (Credit to be arranged.)

Seminars in selected cross-functional and integrative business topics.

BA 495

Business Strategy (4)

Capstone course for the SBA; should be taken in the student's final term. Students learn to systematically analyze a firm's internal and external environments and to apply concepts and theories related to the formulation and implementation of business and corporate level strategies. The influence of other functional areas (marketing, finance, accounting, etc.) on strategic thinking is emphasized in teaching students the linkage between strategic problems, management interpretations, solutions, and firm performance

outcomes. Prerequisites: BA 301, 302, 303, 311, 325, 339, 385 and admission to the School of Business. Priority to graduating seniors who have applied for graduation.

BA 506

Business Project (2-6)

Under the direction of a faculty member, students work in teams to apply M.B.A. knowledge and skills to actual business problems or situations. Students may register for six credits during a single term, or register for three credits during two consecutive terms. After initially meeting as a class at the beginning of the term, students meet periodically with an assigned faculty member to monitor progress on the agreed learning contract and to discuss a variety of implementation and organizational issues.

Prerequisite: BA 509 or Fin 553 (may be concurrent).

BA 508

Leadership Development and Assessment (2)

First stage for the development of leadership competencies. Each student will be expected to write a personal development and learning plan based upon the results of an initial assessment of the student's strengths and weaknesses. During the term the students will be involved in various activities to assess and develop their interpersonal, communication, strategic leadership, and conceptual competencies. Pass/no pass course, concurrent enrollment in Mktg 511 is required.

BA 509

Leadership Immersion (1)

A business simulation practicum designed to assess students' technical and leadership skills. This course can only be taken as a pass/no pass grading option. Prerequisite: Fin 561.

BA 531

Executive Briefings (1)

A weekly series of presentations by local, regional, national, and/or international business leaders on current business topics.

BA 561

Law for Managers (2)

Examines the legal issues that business organizations face. A focus on small and emerging companies will be used. Specifically, contract law, property law (including intellectual property), employment law, secured transactions law, and product liability law will be addressed. Course will also consider the issues with regard to choice of business entity.

*BA 566

Competitive and Strategic Analysis (3)

Integrative course that focuses on application of analytical techniques to the processes and outputs of the firm. Emphasizes the identification, analysis, and evaluation of the marketing, financial, and accounting bases of competition, and the development of appropriate business strategies. Prerequisites: Mktg 544, Fin 561, Actg 511.

Finance

For information on finance option requirements, see Finance. All 300- and 400-level courses require junior-level standing; 400-level courses require admission to the School of Business Administration; graduate courses require admission to the graduate programs. Students admitted to the School of Business Administration will be given registration priority for all 300-level courses.

Fin 199

Special Studies (Credit to be arranged.)

*Fin 218

Personal Finance (4)

A survey of investments, budgets, real estate ownership, financial institutions, consumers' credit, social security, stock market, mutual funds, and estate planning from the individual's point of view. Optional pass/no pass.

*Fin 226

Legal Environment of Business (4)

The meaning and nature of law, sources of law, state and federal court systems, procedures for resolving disputes, business torts, business crimes, antitrust law, labor law, contracts, international business law, ethical considerations, social and political influences.

Fin 301

Stock Market (3)

Analysis of the operation of the stock market. Procedures in the buying and selling of securities. Examination of current regulatory practices.

Fin 319

Intermediate Financial Management (4)

Second level course in financial management to provide more depth in the study of asset pricing, capital budgeting, capital structure, dividend policy, working capital management, growth through mergers, and leasing. Emphasis on the development of problem solving capabilities. Prerequisite: BA 303.

Fin 333

Foundations of Real Estate Analysis (3)

Surveys the legal, physical, and economic structure of the real estate market and the characteristics of real estate resources. Develops basic real estate valuation procedures and provides an overview of market analysis and real estate production, marketing and financing methods. Prerequisites: Ec 201, 202.

*Fin 336

Principles of Risk and Insurance (3)

A study of the principles and practices of life, fire, casualty, marine, and social insurance.

Fin 363

Credit Management (3)

Management functions performed by a credit department; relation to other functions of the business enterprise; nature of consumer credit and mercantile credit, sources of credit information, evaluation of credit risks, and credit controls used in business firms; credit policy determination.

Fin 399

Special Studies (Credit to be arranged.)

Fin 401/501

Research (Credit to be arranged.)

Prerequisite: BA 303.

† Courses in the minor may not be used to satisfy major requirements, except for BA 101.

Fin 405/505
Reading and Conference (Credit to be arranged.)

Prerequisite: BA 303.

Fin 407/507
Seminar (Credit to be arranged.)

Student-selected problems in business operation and business management to be studied by the individual and discussed in group meeting under direction of academic staff. Prerequisite: BA 303.

Fin 409/509
Practicum (Credit to be arranged.)

Field work involving the practice of professional activities away from campus. Prerequisite: consent of instructor.

Fin 410/510
Selected Topics (Credit to be arranged.)

Consent of instructor.

Fin 411
Laws of Real Estate, Personal Property, Trusts, and Estates (4)

Distinction between real estate and personal property, fixtures, landlord tenant, accession, patents, copyrights, trademarks, concurrent ownership, deeds, adverse possession, easements, trusts, REIT, powers of trustees, wills, will substitutes, intestacy, probate. Prerequisite: Fin 226 or BA 385.

Fin 439/539
Real Estate Appraisal (3)

Fundamentals of appraising real estate. Land utilization. Analysis of real estate values by approaches followed by governmental and private appraisers. Prerequisite: BA 303, Fin 551 or Fin 561 or USP 598 or equivalent for 539.

Fin 441
Fundamentals of Derivative Securities (4)

Options, futures, swaps, and other derivative securities. Principles of pricing; uses in speculation, hedging, and risk management, in both securities investment and corporate finance settings. Real options and option-like opportunities in business. Prerequisite: Fin 319.

Fin 444/544
Security Analysis (4)

Theory and techniques of analysis of individual corporate securities. Systematic study of characteristics and potential of stocks and bonds to facilitate investment decisions. Prerequisite: Fin 452/552 or Fin 561.

Fin 447
The Valuation of Real Estate Investments (4)

Principles of valuation applied in the context of real estate investments. Financial strength analysis, cash flow estimation, determining the cost of capital, various discounted cash flow methods. Option valuation and real options approaches. Relative valuation approaches. Applied to the valuation of Real Estate Investment Trusts and other real estate development entities. Prerequisites: Fin 333, Fin 319.

Fin 449
Valuation (4)

Principles of valuation, including valuations both internal and external to the business entity. Financial planning, financial analysis, forecasting, and valuation. Students undertake and

present a formal written valuation. Prerequisites: Actg 381, Fin 319.

Fin 450
Bank Management (4)

Practices, problems and policies of commercial banking as well as other financial institutions from a financial management perspective. Banking regulation, organizational structure, financial analysis of commercial banks, asset and liability management, and other contemporary issues affecting commercial banks. Prerequisite: BA 303.

Fin 452/552
Investments (4)

Analytical study of the principles of investment in stocks, bonds, and other security instruments. Includes background study of financial markets and institutions; analysis of the investment characteristics, valuation, and market price behavior of bonds, stocks, and derivative securities, and the choice of appropriate portfolios of these securities. Also included is the study of information and market efficiency, term structure and the determination of market interest rates, and security valuation. Prerequisites: Fin 452: BA 303, Actg 381 is strongly recommended; Fin 552: Fin 551 or 561.

Fin 456/556
International Financial Management (4)

Development and study of a framework for the financial decisions of multinational businesses; management of working capital, investment and financing decisions of a firm in an international environment; foreign exchange markets, exchange risk, and international diversification. Prerequisite: BA 303 for Fin 456; 551 or 561 for Fin 556.

Fin 465
Finance Topics and Cases (4)

Case studies of financial problems in business including working capital management, capital budgeting, and financing issues. Special topics covered will be at the discretion of the instructor. Prerequisites: Fin 319 and 449.

Fin 573
Investment Analysis and Portfolio Management (4)

A study of the application of both portfolio theory and fundamental valuation techniques in security investment decisions. Students in this course serve as portfolio managers to a real dollar portfolio, providing security and sector oversight to the portfolio. The implications of modern portfolio theory for portfolio management and in portfolio performance evaluation are emphasized. This is the first course in a required two-class sequence. Offered fall and spring terms. Prerequisites: BA 303 (may be taken concurrently with consent of instructor) for 473; Fin 552 (may be taken concurrently), 551, or 561 for 573.

Fin 574
Portfolio Management: Issues and Performance Assessment (2)

This course is a continuation of Fin 573. Students will continue the responsibility of managing a real-dollar portfolio that was initiated in Fin 573. In addition, assessing and reporting on portfolio performance, and presenting a

quarterly report to the investment community, will be an integral aspect of this course. This is the second course in a required two-class sequence. Prerequisites: BA 303, and 473 for 474; Fin 561, 552, and 573 for 574.

***Fin 485/585**
Life Insurance (3)

Analysis of various types of life insurance, accident and sickness coverage and contracts. Premium rates. Family and business need for life insurance. Endowment, annuities, group pension plans, industrial and government insurance. Prerequisite: Fin 336.

Fin 499/599
Real Estate Finance and Investments (3)

Application of finance and economic principles to analysis of real estate finance and investments. Emphasis on the development of problem solving capabilities through the use of computer application programs. Special attention is given to risk analysis, alternative mortgage instruments, hedging techniques, and the tax effects of real estate investment. Prerequisites: BA 303 or USP 423. Prerequisite for graduate students: Fin 551 or Fin 561 or USP 598 or equivalent. (Cross listed as USP 499/599). This course may only be taken once for credit.

Fin 503
Thesis (Credit to be arranged.)

Fin 514
Economic Environment of the Firm (4)

Examines the microeconomic foundations of the firm and provides a broad overview of the financial markets and institution's framework. Included is consideration of the components of the U.S. and international financial system in the global economy, the financial institutions that facilitate the flow of funds, interest rate determination, and how government policy affects funds flow and interest rates. Issues of demand and supply determination, market structure, and resulting economic behavior are also considered.

Fin 545
Hedging and Risk Management (4)

Futures, options, swaps, and other derivative instruments, their characteristics, their uses in financial risk management, and their effects in speculative situations; methodologies for valuation of derivatives. Exotic options, innovations in exotic derivatives and in the development and use of derivatives in corporate finance and investments. The rapid development of derivatives in domestic and international finance. Prerequisite: Fin 561 or 551.

Fin 550
Commercial Bank Management (3)

Theory and practice of commercial banking from a financial management perspective. Banking environment, asset/liability management, capital management, and overall balance-sheet management of commercial banks. Prerequisite: Fin 514 or Fin 561.

Fin 551
Financial Management for Financial Analysts (4)

Gateway course to the Master of Science in financial analysis. Examines the financial con-

cepts and problem-solving skills required to evaluate whether managerial decisions add value to the firm. Students will develop an understanding of the financial implications of business decisions and a framework with which to evaluate their decisions. An integral part of this approach requires understanding how the different functional areas of a business interrelate and the supporting role that finance provides. Topics considered include cash flow analysis, risk determination, valuation, working capital management, and financing. Graduate credit cannot be earned for both Fin 561 and 551. Prerequisite: admission to the Master of Science in financial analysis program.

**Fin 553
Financial Analysis
and Business Valuation (4)**

Financial analysis of the performance of the business or parts of the business such as product or projects. Tools and techniques of financial statement analysis from the perspective of investors and creditors; development of models for determining and forecasting the profitability and financial position of the firm. Business valuation techniques, emphasizing cash flow projections. Some issues in costs and risk management. Theoretical principles and practical approaches of valuation of a business or business interest; valuation strategies for specific purposes such as valuation for mergers, acquisitions, and corporate restructuring, multibusiness valuation, valuation of international businesses. Prerequisite: Fin 551 or 561; competency with electronic spreadsheets.

**Fin 555
Applied Econometrics
for Financial Analysis (4)**

Theory and application of empirical methods, including model development, experimental design, and statistical analysis, applied to issues in business, particularly the areas of accounting and finance. Construction and testing of hypotheses, analysis of variance, multiple regression, methods for dealing with problems in the distribution of data, time series, forecasting, and performance evaluation. Publicly available data will be obtained and used by students. Prerequisite: Fin 551 or Fin 561.

**Fin 561
Financial Management (4)**

Examines the financial concepts and problem-solving skills required to evaluate whether managerial decisions add value to the firm. Students will develop an understanding of the financial implications of business decisions and a framework with which to evaluate their decisions. An integral part of this approach requires understanding how the different functional areas of a business interrelate and the supporting role that finance can provide. Topics considered include cash flow analysis, risk determination, valuation, working capital management, and financing. Prerequisites: BA 530, Fin 514, Actg 511.

**Fin 562
Intermediate Financial Management (4)**

Second-level course in financial management to provide more depth in the study of asset pricing, capital budgeting, capital structure, divi-

dend policy, working capital management, growth through mergers, and leasing. Emphasis is placed on the further development of problem solving capabilities. Prerequisite: Fin 551 or 561.

**Fin 565
Cases in Corporate
Financial Management (4)**

The study of financial decisions and actions in business through the use of case studies. Topics generally include forecasting, investment, financing, and management of working capital accounts with special topics at the discretion of the instructor. Applying theory, performing analyses, and making judgments are critical in this case course. Prerequisite: Fin 551 or 561.

**Fin 569
Advanced Financial Management (4)**

Selected advanced topics in theory and application of valuation, capital investment/capital structure decisions and their interactions, mergers and acquisitions, and leasing. Prerequisite: Fin 561.

Information Systems

For information on Information Systems option requirements, see page 203. All 300- and 400-level courses require junior-level standing; 400-level courses require admission to the School of Business Administration; graduate courses require admission to the graduate programs. Students admitted to the School of Business Administration will be given registration priority for all 300-level courses.

***ISQA 111
Fundamental Computer Concepts (2)**

The fundamental concepts of Electronic Data Processing; the impact of EDP on the firm, and the fundamental concepts of computer use including programming and applications. Provides a general vocabulary and understanding of the capabilities of the computer in business. (One hour of lecture and two hours of recitation.)

**ISQA 360
Computer Programming for Business
Applications (4)**

Introduction to the fundamental programming theories and concepts necessary to create software applications that address the information needs of an organization. Introduces business students to the object-oriented design, implementation, and testing of event-driven programs. Topics include class definition, methods, data types, control structures, and file-based interactive input/output. Provides an overview of the industry proven software-development principles, and outlines the contribution that business professionals make to the program-development process. Prerequisites: BA 325, CS 106.

**ISQA 380
Data Communications (4)**

Topics include communication between people and machines, transmission systems, protocols for communication technologies, and digital communication and networks. Application areas reviewed include data communications, voice and electronic mail, Internet, and mobile systems. Management issues covered include

cost/benefit analysis, organizational impact, international systems, and emerging technologies. Prerequisites: BA 325, CS 106.

**ISQA 399
Special Studies (Credit to be arranged.)**

**ISQA 401
Research (Credit to be arranged.)**

**ISQA 404
Internship (Credit to be arranged.)**

**ISQA 405
Reading and Conference (Credit to be arranged.)**

Prerequisite: consent of instructor.

**ISQA 407
Seminar (Credit to be arranged.)**

Student-selected problems in information systems, quantitative analysis, or operations and materials management to be studied by the individual and discussed in group meeting under direction of academic staff.

**ISQA 409
Practicum in Information Systems and
Quantitative Analysis (Credit to be arranged.)**

This course requires the student to work with a community organization in performing an information systems/quantitative analysis feasibility study. The study may include a current systems analysis, design of the new system, personnel development or training requirements, hardware and/or software recommendations, and assistance in system documentation. Prerequisites: ISQA 421 and consent of instructor.

**ISQA 410
Selected Topics (Credit to be arranged.)**

**ISQA 415
Database Management (4)**

Study of data environments, the evolution of database technology, database concepts and uses, data models, database design, and query processing. Emphasis will be placed on the relational model and database management systems that support the model. Students will participate in database design projects. Other topics address emerging database trends and opportunities. Prerequisites: BA 325, CS 106.

**ISQA 418
Client-Server Application Development (4)**

Provides an introduction to client server application development with emphasis on the client. Topics include graphical user interface development, event-driven programming, and rapid application development tools. Students will participate in the development of projects using programming languages such as Visual Basic. Prerequisite: ISQA 360.

**ISQA 419
Web Application Development (4)**

Introduces the development of applications in Internet environments, focusing on the design and creation of interactive Web sites that provide access to databases. Other topics will include current issues in the evolution of Web technologies, and considerations affecting requirements determination and application design in the Web context. Prerequisites: ISQA 360.

ISQA 420
Systems Analysis and Design (4)

Examines the scope and organization of the systems development process, with particular emphasis on the roles that business professionals perform in systems projects. Topics include system requirements, system specification, systems design, implementation, and project management. Standard system analysis methods and techniques will be presented and applied. Prerequisites: ISQA 360, ISQA 380, and ISQA 415.

ISQA 424
LAN Management (4)

Hands-on introduction to the administration of client/server-based local area networks addressing both conceptual and operational aspects of network operating system management and client operating system configuration. Topics include: design and implementation of network directory services and file systems; network security, backup, and recovery; the implementation and control of distributed print services; user access management and environment automation; and remote workstation management. Prerequisites: ISQA 360.

ISQA 426
Introduction to Decision Technologies (4)

Provides an introduction to the technologies used in aiding decision making in organizations. In addition to the theoretical aspects of decision support, the course exposes students to current technologies. Topics include: human decision making; database technologies for decision support; statistical, analytical, and artificial-intelligence models for decision support; data mining; and on-line analytical processing. Prerequisite: ISQA 415.

ISQA 428
Principles and Practices of Information Security (4)

An introduction to the theories, concepts, and practices relating to the deployment and management of information security systems. Topics include: threat analysis and risk management; encryption and security technology; system design, implementation, and maintenance; and the legal, ethical, and social implications of information security. Prerequisites: ISQA 380.

ISQA 429/529
Transportation and Logistics Management (4)

Overview of logistics including transportation, warehouse location and layout, inventory policies, distribution operations, and information systems. Prerequisite: BA 339 or BA 311.

ISQA 430
Transportation (4)

Develops an understanding of various modes of transportation, primarily focused on business applications and the movement of freight. Operational characteristics of the modes are evaluated, freight rate derivation and analyses are understood, and organizational evaluations of transportation strategies are studied. Transportation contract forms are analyzed and transportation risks are evaluated. Prerequisites: BA 339.

***ISQA 435**
Business Research Design and Analysis (3)

This course is concerned with the application of multivariate methods of data analysis in business research. Emphasis is on the process of business data analysis including research design, implementation, and hypothesis testing. Prerequisites: Stat 243, 244.

ISQA 436
Advanced Database Administration (4)

Advanced study of data environments, data modeling techniques, database design, query processing, and optimization. Emphasis will be placed on client-server architecture and data environments such as Oracle and SQL Server. Students will participate in database design projects. Other topics will include industry trends and opportunities, and database administration. Prerequisite: ISQA 415.

ISQA 439/539
Purchasing and Supply Chain Management (4)

Deals with developing sound policies and procedures in managing the supply chain. Topics include supplier selection and evaluation, competitive bidding, contract development and administration, value analysis, and standardization. Prerequisite: BA 339 or BA 311.

ISQA 449
Process Control and Improvement (4)

Study of the principles of quality management including statistical quality control, total quality management, and the quality tools especially as they apply to supply and logistics processes. Prerequisite: BA 339.

ISQA 450
Project Management (4)

Develops a basic understanding of principles and tools of project management. Covering the phases and activities of projects, as well as the management tools used to create project plans, management, including the impacts of organizational strategy, structure and culture on the development and execution of projects. Prerequisites: Upper division standing in the SBA.

ISQA 451
Business Forecasting (4)

Focuses on the use of various forecasting tools to aid in making managerial decisions. Examination of the various forecasting models and methods in a core activity. Understanding the abilities of the forecasting tools will be examined. Students will analyze data using many of the tools and assess and evaluate the validity of each. Prerequisites: BA 339.

ISQA 454
Supply and Logistics Negotiations (4)

An introduction to commercial negotiation. Includes applications both within and outside an organization, such as negotiating with peers and other employees as well as with suppliers of materials and services. Negotiation planning, tools and tactics, and the conduct of a negotiation are studied. Extensive hands-on negotiation practice is included. Prerequisite: BA 339.

ISQA 458/558
Purchasing and Logistics within the Food Industry (4)

Explores the rapid transition of food industry operations through an in-depth look at food commodity production, processing, storage, and transportation; facility location and transportation network design; role of wholesalers and distributors in the food supply chain; food safety; food industry consolidation and globalization; supply chain compression; ECR and demand forecasting; and e-commerce and the food industry. Prerequisite: BA 339.

ISQA 459/559
Production Planning and Control (4)

Intermediate and short range production planning and scheduling. Topics will include aggregate planning, materials requirement planning, scheduling and just-in-time. Prerequisite: BA 339.

***ISQA 461**
Operations Research Techniques (3)

Introduction of methodology of operations research. Investigation of construction, solution and application of models useful for decision making in business. Prerequisites: upper-division standing, BA 339 and Stat 243, 244.

***ISQA 462**
Decision Simulation (3)

Emphasis given to the use of gaming to reveal the complexity of the total organization and of the interrelationships of the activities of the firm. Students compete in a simulated business environment and are thus allowed to make use of dynamic analysis.

***ISQA 463**
Mathematical Modeling in Decision Making (3)

The incorporation of numerical considerations and applied mathematics into the modeling process is the primary focus of this course. Students will gain practice in creative and empirical model construction, model analysis and model research for practical and realistic problems. The emphasis is on the importance of the assumptions in a model and on testing the sensitivity and appropriateness of assumptions against empirical data. Prerequisite: ISQA 461.

ISQA 469/569
Productivity Analysis (4)

The role of operations strategy on the firm's cooperative ability and the organization's programs and techniques for measuring and improving productivity and for assuring quality. Prerequisite: BA 339.

ISQA 479
Integrated Supply and Logistics Management (4)

Capstone course using cases and projects to integrate the various concepts of supply and logistics management. Prerequisites: ISQA 429, 439, and 3-4 additional credits in supply and logistics management option courses.

ISQA 511
Quantitative Methods For Managers (4)

Covers the quantitative methods useful in managerial analysis and decision making. Basic and advanced statistical models as well as forecasting

and management science tools are studied.
Prerequisite: admission to graduate program.

ISQA 518
Electronic Commerce (3)

Survey of technologies and technological applications to conduct business electronically today and in the future. Students will learn about electronic data interchange, the role of technology in electronic markets, the Internet, and the organizational impact of these technologies. Internet-based technologies will be presented and used.

***ISQA 525**
Database Design (2)

Practical course focusing on the design and use of databases. Students will learn to model data needs, design relational databases based on those needs, and methods for querying a database. A Database Management System (DBMS) will be used. Other topics address emerging database trends.

***ISQA 530**
System Architectures (3)

Study of cutting-edge hardware and software architectures and their usage in business environments. Students will learn how managers identify and adopt new technologies for business systems. Topics include hardware/software concepts, needs assessment, decision criteria, and implementation issues. Prerequisite: ISQA 551.

ISQA 551
Managing Information Technology (4)

Course participants explore information technology (IT) from an innovation-management perspective. This has two aspects. First, participants consider IT for its increasingly central role in fostering business innovation, including strategic and operational initiatives in such areas as electronic commerce, global market expansion, supply chain management, business process redesign, and knowledge management. Second, participants examine information technologies as innovations in their own right. In considering the associated management challenges, particular emphasis is placed on IT innovation as a knowledge-based process that demands careful management of business and technical partnerships within and across firm boundaries.

ISQA 552
Managing Operations and the Value Chain (4)

Introduces the students to basic operations and supply chain issues. In addition, issues around the use of natural systems and other models of managing work will be considered within a perspective of sustainable organizations. Prerequisite: Actg 512.

ISQA 572
Models for Quality Control (3)

Study of variability. Emphasis on quality improvements through the application of experimental design. Topics include accounting for randomness, systematic identification of sources of variation, control charts, and statistical process control (SPC). Course will use a combination of cases, lecture, and computer-aided analyses to provide the students with a founda-

tion in quality control analysis. Prerequisite: ISQA 551.

Management

For information on the management option requirements, see page 203. All 300- and 400-level courses require junior-level standing; 400-level courses require admission to the School of Business Administration; graduate courses require admission to the graduate programs. Students admitted to the School of Business Administration will be given registration priority for all 300-level courses.

Mgmt 199
Special Studies (Credit to be arranged.)

Mgmt 351
Human Resource Management (4)
Studies the human resource management functions performed by the human resource manager as well as by the line executive or supervisor. Uses contemporary approaches and problems to analyze the entire process of performance management, including human resource planning/job design, selection and staffing, training and development, compensation, performance appraisal, and employee and labor relations. Also examines legal questions which affect human resource management. Prerequisite: BA 302. Preference on the waiting list will be given to HRM-option students.

Mgmt 399
Special Studies (Credit to be arranged.)

Mgmt 401/501
Research (Credit to be arranged.)

Mgmt 404/504
Internship (Credit to be arranged.)

Mgmt 405/505
Reading and Conference (Credit to be arranged.)

Consent of instructor.

Mgmt 407/507
Seminar (Credit to be arranged.)

Student-selected problems in business operation and management to be studied by the individual and discussed in group meeting under direction of academic staff.

Mgmt 409/509
Practicum (Credit to be arranged.)

Mgmt 410/510
Selected Topics (Credit to be arranged.)

Mgmt 441
Collective Bargaining and Labor Negotiations (4)

Workshop giving students hands-on experience negotiating individual and group contracts. Students will learn how to manage the employment relationship within a union environment, studying: the legal environment of unions; negotiations theory and practice; and grievance resolution procedures. Students will devote significant time in class to negotiating individual and group contracts, and will have ample opportunity to receive feedback to improve their skills. Prerequisite: BA 302.

Mgmt 445
Organizational Design and Change (4)

Study of organizations from a macro perspective. Emphasis will be on the implications of dynamic environments, innovation, and technology for organizational structure, design, and processes. Management of change from a multi-

level perspective will also be addressed. Prerequisite: BA 302.

***Mgmt 446**
Principles of International Management (4)

Study of the managerial functions and problems related to international business activity. The focus of this course is on the management of foreign trade, direct investments, and international operations. In addition, the political, economic, and cultural environments of international business are examined from the perspective of management. Comparative management is also treated through the study of other management systems. Prerequisite: BA 302.

Mgmt 447/547
The Power of Soul and Spirit in Business (4)

Seminar devoted to exploring what soul and spirit means in the context of today's workplace; its current relevance to business; strategies for injecting more soul and spirit into working environments; and methods for developing sensitivity and appreciation for this dynamic approach to being in the business world. Topics to be explored include methods for building community in the workplace; strategies for developing one's inner life; methods for fueling creativity; approaches to bringing one's whole self to work; and examining new methods of leadership. Prerequisites: BA 302 for Mgmt 447; Mgmt 550 for Mgmt 547.

Mgmt 448
Team Processes (4)

Designed to provide the student with a working understanding, and practical skills, related to operating effectively in team settings. The influence of member personality and attributes on teamwork, motivating team members, developing effective team processes, and constructive conflict management and team communication are some of the issues that may be addressed. Also focuses on the development and use of a variety of teams prevalent in contemporary organizations and some of the challenges faced in using these teams in an optimal fashion. Prerequisite: BA 302.

Mgmt 461/561
Reward Systems and Performance Management (4)

Study of reward system practices that aid in motivation, employee development, and productivity improvement to meet organization goals. Shows how job analysis data forms the information base for both compensation and performance appraisal processes. Includes an analytic study of traditional and evolving methods of compensation management, and relates this and performance appraisal processes to the broad performance management framework. Prerequisite: prior completion of Mgmt 351; prior completion of or concurrent registration in Mgmt 550. Preference on waiting list will be given to HRM-option students.

Mgmt 464
Contemporary Leadership Issues (4)

Investigation of the ideas of what constitutes "effective leadership" as organizations enter the 21st century. Various aspects of the new leadership paradigm are addressed. Students will

develop an awareness of their personal leadership profile and capabilities and the issues they will face as leaders in tomorrow's organizations. Prerequisite: BA 302.

***Mgmt 470/570
American Business History (4)**

A critical examination of the growth of the American business system, with particular attention to studying the environmental genesis and evolution of significant business organizations. The course will also deal with the evolutionary changes in business leaders and their managerial styles. Prerequisite: BA 302 or 385.

**Mgmt 471/571
Staffing and Employee Selection (4)**

The staffing process includes the acquisition, selection, and placement of employees to achieve the strategic human resource goals of the organization. Topics covered include staffing strategies, human resource planning, legal issues, recruitment methods, selection techniques (e.g., biographical information, interviewing, ability tests, work samples, assessment centers), selection validation, and utility analysis. Prerequisite: prior completion of Mgmt 351; prior completion of or concurrent registration in Mgmt 550. Preference on waiting list will be given to HRM-option students.

**Mgmt 491/591
Training and Development (4)**

Training and development highlights the organization's commitment to its employees. The course looks at training needs analysis; the nature, types and methods of training; career stages, paths, planning; retraining outdated workers; outplacement, evaluation of training effectiveness; long-term development programs; and processes of organization development. Prerequisite: prior completion of Mgmt 351; prior completion of or concurrent registration in Mgmt 550. Preference on waiting list will be given to HRM-option students.

**Mgmt 493
Human Resource Policies (4)**

An in-depth, analytical study of human resources and the tasks of the modern human resource manager, with an emphasis on the policy making aspect of human resource management. Studies executive-level decision making within staffing, training, compensation, appraisal, and labor relations. Examines emerging issues in HRM, such as quality of work life, wellness, substance abuse, human resource information systems, etc. Prerequisites: Mgmt 351 and two of the following courses: Mgmt 461, Mgmt 471, or Mgmt 491; admission to the School of Business Administration. Preference on the waiting list will be given to HRM-option students.

**Mgmt 503
Thesis (Credit to be arranged.)**

***Mgmt 540
Business/Government Relations (3)**

The role and importance of the business/government relations function in business enterprises is examined. Topics covered include: monitoring the governmental system, interest groups, lobbying, trade associations, govern-

mental structure, regulatory process, and access to executive/legislative processes. Case analyses and projects may be used in the course. Prerequisite: Mgmt 560.

**Mgmt 544
Technology Management (4)**

Course takes a systematic approach to managing technology and innovation. Addresses issues of technology and competition, technology infrastructure, technology strategy, research and development, the roles of invention, innovation, research and development, product development, and other critical technology related topics. Coverage will also be given to issues related to product development as well as IT strategy and in-depth examination of the current technologies of the day.

**Mgmt 545
Managing Innovation Performance (4)**

Examines the non-technical, human side to the challenges of technological innovation management. Course topics include technical professional performance and productivity, high performing technical teams, managerial effectiveness, innovative work cultures, and organizational practices and policies that promote technological innovation and new product development. Practical applications of course concepts to actual work situations are emphasized.

**Mgmt 546
Principles of International Management (4)**

Covers the major challenges of managing internationally, including political risk assessment, international strategy, structuring and controlling the multinational enterprise, international negotiations, and international human resource management. Course is targeted both toward managers who work abroad as well as those dealing with international business from the home country.

***Mgmt 549
Services Management and Operations (3)**

Addresses the unique aspects of successful services management and operations. In particular, the course examines the service concept, how customer focus is achieved, strategic considerations in creating superior customer value, the human resource challenges of selecting, training, and motivating service providers, and how service systems are structured to smooth demand and enhance system capacity. The goal is to understand how to analyze any service system, whether it resides in a manufacturing, service, or non-profit organization, and explore ways to enhance system effectiveness.

**Mgmt 550
Organizational Management (4)**

Covers issues in organizational behavior and human resource management that are critical to organizational effectiveness. Organizations are studied from three perspectives: the individual, the work team, and the organization as a system. Topics include motivation, performance assessment, creative problem-solving, compensation, staffing, employee development, and organizational design. Focal emphasis on business leadership is examined from a multi-level perspective. Prerequisite: Mktg 511.

***Mgmt 551
Managing Human Resources (4)**

How do managers help their subordinates achieve great and sustainable performances? In the 21st century, the employment contract has undergone significant changes, with both the workforce and the organization being vastly different from their predecessors. Focuses on the daily strategies of generalists as they lead their subordinates to high long-term productivity. Studies all aspects of the employee life cycle from selection through separation, including employee development, reward systems, performance management, and employee relations. Emphasis on problem solving for practicing managers. Prerequisite: Mgmt 550.

***Mgmt 554
Negotiation and Conflict Resolution (3)**

Examines negotiation as a sometimes rational, sometimes irrational social process used for resolving conflict. Studies the interdependence between parties which causes the conflict; focuses on effective and ineffective negotiating tactics between these competing groups. Explores the use of impartial third parties to facilitate negotiations. Practical applications include labor management relationships, purchase agreements, organizational goal setting, etc. Prerequisite: Mgmt 550.

***Mgmt 555
Management of Organizational Change (3)**

A seminar focused on the concepts, theories, and practice of managing organizational change and development. Class discussion will center on an examination of the history and assumptions of organizational development and change, the action research model and other foundations, plus a variety of organization intervention techniques. Special issues such as ethics in client-consultant relationships will be integrated into class activities. Prerequisite: Mgmt 550.

**Mgmt 556
Organizational Politics (3)**

A study of the theoretical and practical aspects of success in organizations. Topics may include how to acquire, maintain, and use power; how to deal with superiors and subordinates; techniques for more quickly rising on the organizational ladder; misuses of power; developing mentor relationships; power games; and success symbols. Prerequisite: Mgmt 550.

**Mgmt 560
Ethics in Organizations (2)**

Provides an understanding of the ethical issues that managers and organizations face. Topics covered include business ethics, corporate social responsibility, public policy process in relation to business, and managerial integrity. Prerequisite: Mktg 511.

**Mgmt 562
Business Strategy Capstone (4)**

An integrative, capstone study of strategy formulation and implementation in international and domestic business enterprises. Case analysis and other appropriate methodologies are used to develop the skills and judgment necessary to

provide overall direction to the organization. Special emphasis will be placed on how to successfully match competitive strategy with effective implementation policies. Prerequisites: Fin 551 or 561.

***Mgmt 565
Case Problems in Organizations and Management (3)**

The study of managerial action and process in organizations through the use of case studies. The actual topics will vary during any particular term, but may include: the resource allocation process, balancing short and long term goals, organizational culture, group dynamics, the ethics of decision making, and performance measurement and reward systems. International situations and problems will be included. Prerequisite: Mgmt 550.

**Mgmt 601
Research (Credit to be arranged.)**

**Mgmt 607
Seminar (Credit to be arranged.)**

Marketing

For information on marketing option requirements, see page 203. All 300- and 400-level courses require junior-level standing; 400-level courses require admission to the School of Business Administration; graduate courses require admission to the graduate programs. Students admitted to the School of Business Administration will be given registration priority for all 300-level courses.

**Mktg 199
Special Studies (Credit to be arranged.)**

**Mktg 338
Professional Selling (3)**

An overview of personal selling as an element of the promotion mix. Emphasis is on individual and team selling strategies within a professional sales environment. Topics include characteristics of successful salespersons and firms, buyer behavior as part of individual and group purchase processes, the process and structure of sales presentations, and the role of selling as part of the marketing effort. Prerequisite: BA 205.

**Mktg 340
Advertising (4)**

An introductory course designed to provide an overview of marketing communications, plus an understanding of fundamental advertising issues and strategies. Course focuses on concepts, principles, processes, terminology, trends, and techniques which shape this constantly changing field including the impact of technology on message delivery.

**Mktg 341
Public Relations (3)**

Principles of public relations in contemporary America, with emphasis on the role of public relations in business. Prerequisite: Mktg 340.

**Mktg 363
Consumer Behavior and Customer Satisfaction (4)**

Explores the determinants of consumer and business buying behavior. Applications of behavioral concepts to marketing strategy are emphasized along with how to measure, retain, and enhance customer satisfaction while developing long-term relationships. The use of tech-

nology and databases in understanding the marketplace is explored. Prerequisites: BA 311; six credits in psychology, sociology, or anthropology in any combination recommended.

**Mktg 376
International Business (4)**

International business concepts and practices relating to international trade are presented at a survey level. Current global issues related to international trade and actual international problems are identified along with the basic concepts related to international finance, management, and marketing practices.

**Mktg 399
Special Studies (Credit to be arranged.)**

**Mktg 401/501
Research (Credit to be arranged.)**

**Mktg 404/504
Internship (Credit to be arranged.)**

**Mktg 405/505
Reading and Conference (Credit to be arranged.)**

Consent of instructor.

**Mktg 407
Seminar (Credit to be arranged.)**

Student-selected problems in business operation and business management to be studied by the individual and discussed in group meeting under direction of academic staff.

**Mktg 409/509
Practicum (Credit to be arranged.)**

Field work involving the practice of professional activities away from campus. Prerequisite: consent of instructor.

**Mktg 410/510
Selected Topics (Credit to be arranged.)**

**Mktg 430
Entrepreneurship (3)**

The study of entrepreneurship, with emphasis on identifying market opportunities and the development of marketing and business plans to meet these opportunities. Prerequisite: BA 311.

**Mktg 435/535
Consumer Package Goods Marketing (4)**

Examines marketing distribution systems used by food and consumer package goods (CPG) companies. Emphasis on describing CPG industry value chains and how business environmental factors impact the creation, delivery, and capture of customer value by different industry participants. Examines the marketing relationships between manufacturers, wholesalers, brokers, retailers, and consumers. Topics include ECR, category management, Efficient Replenishment, retail trends in buyer behavior, e-commerce, new product introductions, Efficient Promotion, trade relations, industry alliances, competitive trends, channel roles and conflicts, and globalization. Prerequisite: BA 311 or 339.

**Mktg 436/536
Global Business Issues (3)**

Globalization is having an increasing impact on the nature of competition. Managers need to better understand the impact of globalization on the firm and on what managerial skills are needed to be effective in an increasingly international environment. Class is designed to bring renowned business and government leaders into

the classroom to discuss their experiences in international business. In each class students relate theory from course materials to the experiences of these leaders and discuss implications for practicing managers.

**Mktg 441
Media Strategy (4)**

Examines the advertising media process as an outgrowth of marketing and advertising objectives. Focuses on strategic issues, quantitative decision making, and media planning and negotiating techniques. This course is data intensive and analytical, with attention given to the Internet, local, and non-traditional mediums, as well as dominant national measured media. Prerequisite: Mktg 340.

**Mktg 442
Creative Strategy (4)**

Course puts into practice the theories, principles, and techniques of the advertising business loosely known as "creative." Course material will focus on the strategy behind advertising messages, techniques for writing and designing advertisements, and the unique requirements of different types of creative messages. Also includes creative considerations for specific media including those driven by technology. Prerequisite: Mktg 340.

**Mktg 443
Advertising Campaigns (4)**

Emphasis is on the development of total advertising campaign from a marketing perspective. Integrates elements of the advertising process such as setting objectives, selection of target markets, budget development, media selection, message creation, production, development of presentation and recap documents and the staging of a major promotional event using both traditional and emerging advertising media as available. Prerequisite: Mktg 340, 441, 442.

**Mktg 444
Advertising Account Management (4)**

Course for college seniors who aspire to a career in advertising agencies as account managers as well as students who aspire to a career in advertising media or advertising creative positions working with account managers. Course will cover contemporary topics in account service, client relations, skill building, and career planning. Course format is intended to be highly interactive, with numerous guest lectures from ad executives, case problems, written assignments, reading assignments, agency visitations, and at least one project. Prerequisite: Mktg 340.

**Mktg 445, 446, 447
National Student Advertising Competition (2, 4, 2)**

A three-term, advanced learning course which is part of a national competition and is offered in conjunction with the American Advertising Federation. Participants will form a traditional advertising agency and develop a national campaign for a national brand company. Campaign development focuses on research, creative strategy, the media plan, ad production, integration of promotional and interactive components, presentation, and budgeting. Prerequisites: Mktg 340, 441 and 442.

Mktg 450**Product Innovation and Management (4)**

Product innovation is at the core of the marketing process. The Internet has changed the rules of product development by erasing competitive barriers and emphasizing rapid development cycles. The class will focus on identifying new product opportunities, rapid innovation procedures, the management of the development process, and alignment with e-marketing strategy. Prerequisite: BA 311.

Mktg 452**Business-to-Business Marketing (3)**

Management of the marketing activities of enterprises serving business-to-business markets. The course includes industry and competitor analysis, the fundamentals of competitive advantage and the role of product, price, distribution, and promotion in the creation of competitive market strategies. Prerequisite: BA 311.

Mktg 455**Technology Marketing (4)**

Survey of Internet-based marketing strategies with special focus on the Web in business-to-business and business-to-consumer situations. The course encompasses the strategic market planning and implementation processes as applied to e-business including identifying and analyzing e-market opportunities, data warehousing/mining, developing e-products, creating the customer interface, e-pricing, e-branding, and e-positioning strategies. Additional emphasis is on creating and leveraging a strategic Web presence with portals, partnerships, community building, and permission-based marketing. Prerequisite: BA 311.

Mktg 460**Marketing Research (4)**

Studies the planning, data collection, analysis, and reporting issues relating to marketing research. Key issues include defining information needs, sampling, using conventional methods and information technology to obtain primary and secondary data, instrument design, statistical data analysis, interpretation and reporting of data. Prerequisite: BA 311.

Mktg 461/561**eMarketing (4)**

Examines important marketing issues in a business world that is being transformed by widespread adoption of the Internet and related technologies. Topics include customer relationship management, effects of Internet on product-related issues (such as branding and new product development), pricing, distribution, and promotion, security, and privacy concerns. Prerequisite: BA 311.

Mktg 462/562**Customer Information and Relationship Management (4)**

Examines the operational, organizational and behavioral issues that surround customer relationship management. It explores the marketing processes and strategies that are needed to differentiate and interact with customers through customized offerings. Database mining techniques are used to analyze and address customer needs. Prerequisites: BA 311, Mktg 460 for 462; Mktg 544 for 562.

Mktg 464**Marketing Strategy and Management (4)**

Capstone marketing course that focuses on the development of the marketing plan. The emphasis is on integrating the major areas of marketing management including customer identification, industry analysis, product and communication strategies, distribution, pricing, and control in an e-business environment. Prerequisite: BA 311, Mktg 460.

Mktg 466**Principles of International Marketing (4)**

Differences between domestic and international marketing are examined. A market-oriented conceptual foundation relating international channels of distribution, financing, documentation, transportation organizing, and staffing is presented. Prerequisites: BA 311, Mktg 376.

Mktg 467**Sales Management (4)**

Survey of the sales management function with attention to sales force selection, allocation of sales effort, motivation and reward of sales force, sales automation tools, and the integration of sales with e-business strategy. Prerequisite: BA 311.

Mktg 475**Retailing (4)**

Focuses on the distribution of goods to consumers. It emphasizes the dynamic nature of the retail environment and how changes in consumer demographics, new technology, globalization, new competitive forms, and the Internet are revolutionizing the retail industry. Topics include: purchasing, category management, Web marketing, trade relations, retail operations, and promotion. Prerequisite: BA 311.

Mktg 503**Thesis (Credit to be arranged.)****Mktg 507****Seminar (Credit to be arranged.)**

Marketing Trends and Developments. Marketing Information Systems. Marketing Models. Export Planning for Executives. Sales Force Management.

Mktg 511**Pioneering Innovation (4)**

This foundational MBA course provides students with an understanding of the innovation process and its relationship to creating and managing organizations that can be sustained in the global economy. Included in the course is consideration of the external forces and trends that confront the innovation process, coupled with an internal assessment of corporate strengths and weaknesses. Consideration of the customer and the customer/firm interface is emphasized. Additionally the course will include methods for fostering the creative process, both individually and within the firm. Concurrent enrollment in BA 508 is required.

Mktg 544**Marketing Research and Strategy (4)**

Introduces basic concepts of the marketing process from the perspective of the marketing manager and provides a framework for the analysis of marketing management problems. A key focus is to develop the necessary marketing

planning and analytical skills to develop marketing strategies. Specific topics include the role of marketing in a competitive environment, impact of technology on marketing strategies and processes, analysis of marketing opportunities and the competitive environment, selection of target markets, market segmentation, and marketing strategies in the global marketplace. Prerequisite: Mktg 511.

Mktg 546*Buyer Behavior and Communication (4)**

Study of determinants and influences on purchasing behavior emphasizing contributions from behavioral sciences. Course explores application of competitive and technological influences on buyers behavior and marketing strategy. Emphasis on marketing communication and promotion. Prerequisite: Mktg 544.

Mktg 547*Distribution Strategies (3)**

Examines the fundamental and emerging trends in distribution activities of business enterprises. Course analyzes the competitive advantage(s) associated with distribution strategies. Explores trends in channel design, the changing role of participants, channel relationships, and channel communications. Prerequisite: Mktg 544.

Mktg 548**Product Management and Innovation (3)**

Examines the role of product innovation and management as the core focus of marketing strategy. Major topics include new product strategy formulation, product design and development, managing the product line, and organizational considerations in product management. Special attention is given to aligning product development with e-business strategy. Prerequisite: Mktg 544.

Mktg 551*Managing Marketing Information (3)**

Study of the uses and implementation of tools, methods, processes, and systems for managing marketing information. Emphasis will be placed on the determination of information needs for marketing decisions, the methods, processes, and systems for effective and efficient management of marketing information, as well as the new marketing approaches and tools that utilize information technology for marketing products and services. Prerequisite: Mktg 544.

Mktg 552*eServices Marketing (4)**

Focuses on understanding the distinction between service versus product marketing with an emphasis on assessing, designing, and managing on-line service offerings. eService relationships will be examined within a customer loyalty framework that considers customer value, switching costs, and on-line relational bonds as key drivers of loyalty. Prerequisite: Mktg 544.

Mktg 555**Technology Marketing (4)**

Designed to introduce students to the special issues faced by managers marketing technology products in markets characterized by rapid change. Topics include identification of market opportunities, market segmentation, positioning, product innovation, customer value cre-

ation, managing the customer interface, and new approaches to distribution. Emphasis will be on strategies for marketing technology products in an e-business environment.

***Mktg 560
Research for Marketing Decisions (4)**

Designed to study the methods of gathering primary and secondary information for business decisions. Also designed to study how to become a good information user. Emphasizes the planning, design, and implementation of quantitative and qualitative research projects to obtain information from internal and external business environments. Considers the evaluation and appropriate use of information, information sources and research services. Prerequisite: ISQA 511, Mktg 544.

***Mktg 565
Marketing Strategy and Decision Making (3)**

Develops the student's ability to understand, analyze, and evaluate marketing situations and to develop appropriate marketing strategies. Stresses detailed analysis of the competitive environment, integration of marketing technologies, and the design and implementation of marketing strategies. Integrates a case or project format. Prerequisite: Mktg 544.

***Mktg 566
Global Marketing Management (4)**

Examines and provides a framework for study of the global marketing environment as well as the management of global marketing enterprises and global marketing practices. Encompasses the preparation for global competition, assessment of environmental forces, and strategic and operational planning for marketing in the global environment. Also examines the management of international, multinational and global marketing enterprises and their marketing activities. Prerequisite: Mktg 544.

***Mktg 567
Sales Force Management (4)**

Involves a detailed study of the sales management function. Issues to be addressed include designing the sales force, setting objectives, developing strategy, recruiting, evaluating, compensating, and controlling the program. Special attention is given to integrating the sales force with e-business strategy. Prerequisite: Mktg 544.

**Mktg 601
Research (Credit to be arranged.)**

**Mktg 607
Seminar (Credit to be arranged.)**

Master of International Management

**MIM 510
Age of Pacific Seminar Series (2)**

Special topics either under the sponsorship of the Age of the Pacific Series or an elective course addressing contemporary business issues in international business.

**MIM 511
Global Business and Sustainability (4)**

Examines the meaning of sustainable development for a profit-making global corporation, the effect of global protocols and conventions on global corporate sustainable development strategies, and how corporations and industries develop their strategies for sustainable development. Takes a multiple stakeholder perspective of organizations and the natural and social environments, especially related to systems thinking and innovation. Students learn how to better anticipate and manage a global corporation's social and environmental issues.

**MIM 513
Pacific Rim Economies, Trade, and Financial Markets (3)**

Survey of current economic trends among the Pacific Rim economies, focusing on potential problems and opportunities of each country. Course also covers the principles of international trade, balance of payments and adjustments, impediments to trade flows, financial institutions and markets, and national economic policies affecting business in the Pacific Rim and the United States.

**MIM 515
Contemporary Global Marketing (4)**

The global/international marketing strategies and operations of multinational corporations (MNCs) are studied through assessment of international markets, marketing environments, and various aspects of global marketing strategies and marketing management.

**MIM 516
Contemporary Pacific Rim and World Affairs (4)**

Study of the contemporary political, economic and social issues of significance to the Pacific Rim countries, with particular emphasis on the international politics of China, Japan and Korea. Enables students to anticipate the politics of international transactions, understand key issues in the transition from the cold-war to post-cold war period, appreciate the major regional organizations and organizing philosophies in Asia, understand the relationship between domestic and external politics, and clarify the motives and interests of major governments.

**MIM 517
Accounting for Global Enterprises (4)**

Study of international accounting issues crucial for effective interpretation and understanding of international business. Goal of the course is to build a framework that can be used to analyze and understand financial reports used by multinational corporations (MNCs). Special managerial and control problems of MNCs, including performance evaluation, transfer pricing, and taxation will also be addressed.

**MIM 519
International Law and Ethics (4)**

Study of the social, political, and legal context of international business management through the examination of the variety of means by which the values of society and the actions of government impact the success or failure of multinational business transactions. The complex regulatory and ethical issues that may occur in the culturally and historically diverse Pacific Rim markets will also be examined.

**MIM 521
Evaluating and Measuring the Sustainability Performance of Global Corporations (4)**

Helps students develop an understanding of how the measurement of a global company's environmental and social performance contributes to business goals and strategies. Students examine how different global companies measure and report on their environmental and social performance, and how their different approaches link to their market strategies, business fundamentals, and management philosophies.

**MIM 524
Global Sourcing and Supply (4)**

Focuses on purchasing and supply management in an international environment. Included will be such topics as locating and qualifying international suppliers, and developing contracts and long term relationships with chosen suppliers. Other topics for study will be payment processes, including letters of credit and currency exchange rate fluctuation risk management. This course will also contain a segment focused on doing business in specific Pacific Rim countries. A commodity study will be required.

**MIM 531
Product Design and Stewardship for Global Corporations (4)**

Takes the view that to maximize a global firm's competitive advantage, managers need to know how to identify opportunities to initiate changes in the firm's value chains that reduce waste and generate value. Addresses the principles of industrial ecology, environmental management systems, product stewardship and life cycle analysis, eco-efficiency and design for the environment. Case studies will be used to explore the practical challenges and opportunities to implementation of product design and stewardship activities.

**MIM 534
Global Logistics Management (4)**

Includes studies of inventory and warehouse planning and control and the principles of transportation. Managing logistics in an international environment will be the primary focus, with special attention given to air and sea transportation. Topics such as liner conferences and air freight will be included.

**MIM 535
Global Market Research (4)**

A fundamental difference between the practice of marketing in domestic markets vs. global markets is the greater diversity of global markets and the scope of marketing activities. Global marketing managers need to have accurate and useful information about the nature of international markets to make successful decisions about market selection, positioning and the development and execution of global marketing programs. Introduces students to the tools and methodology of global market research from the perspective of the practicing manager. Emphasis on helping students understand the general kinds of information required to make effective marketing decisions and introducing the sources and methods used to acquire that information.

**MIM 541
Stakeholder Management and Cross-Sector Partnerships (4)**

Studies interactions with key stakeholders to achieve specific sustainability goals, e.g., reduced energy use, contamination remediation, and community engagement. Using a systems approach, examines the roles of key stakeholder groups (e.g., government, non-governmental organizations (NGOs), competitors, suppliers, and customers) in sustainability; the process for identifying and engaging key stakeholder groups; the formation and effective management of cross-sector partnerships, in particular corporate-government and corporate-non-governmental organization partnerships.

**MIM 544
Integrated Global Supply and Logistics Management (4)**

Final course in the specialization in global supply chain management. Integrates all of the concepts contained within the previous three classes. Global supply and logistics planning and strategy development is the primary emphasis. Case course where each week students will be expected to analyze and prepare a supply and logistics case in an international setting. Emphasis on developing analytical and problem-solving skills and on generating the quantitative information necessary to make superior managerial decisions.

**MIM 545
Global Selling (4)**

Focuses on helping students develop an understanding of Asian company purchasing practices and buyer behavior, and linking that understanding to the development of effective selling skills in a business-to-business environment and an understanding of effective sales management strategies and activities. The integration of sales automation technology and e-business will be discussed.

**MIM 547
International Trade Practices (2)**

Study of the practices of international trade. Comprehensive discussion of the practical knowledge and skills required for engaging in international trade. In-depth examination of both export practices and import practices that includes a practitioner-directed international trade practice project.

**MIM 558
Comparative Operations Management (4)**

The changing international environment in manufacturing will be reviewed through: comparative study of process selection, facilities design, operations planning and control, supply logistics, process benchmarking, technology management, international supply chain and customers, quality management, and performance measurement.

**MIM 564
Global Human Resource Management (4)**

Examines the management of human resources in the international firm, including motivating and leading employees in multi-cultural contexts. Course begins with an analysis of the human resource management philosophies and approaches to industrial and employee relations in representative countries. Integration of human resource management systems in international firms, including the creation of global corporate culture, HR support for organizational learning and approaches to human resource management transfer across borders, are also studied. Also examines the nature of successful cross-cultural teams and principles of leading change in multinational firms.

**MIM 568
Managing Information Technology Globally (4)**

Focus on the use of information technology in a competitive international environment and the impact information technology has on international business operations. The vocabulary and background of information technology issues that cross national boundaries, and the use of information superhighways to obtain critical information and maintain business relationships in other countries will be studied and discussed.

**MIM 574
International Corporate Finance and Investment (4)**

Focus on investment and financing decisions of firms operating in more than one nation. Topics include international risk and value analysis, cross border capital budgeting and capital acquisitions, financing mix, working capital management of multinationals, foreign exchange risk and exposure management, estimating cost of capital international investment, international capital markets, and sources of financing. Prerequisites: MIM 513, 517.

**MIM 575
Marketing in Asia and the Pacific Rim (4)**

Study of marketing strategies and practices in Asian and other Pacific Rim countries. Markets, marketing environments, and marketing practices in selected Asian countries are analyzed. Planning, and managing marketing strategies and operations are also included. Prerequisites: MIM 515, 516, 523, 547.

**MIM 576
Advanced Cross-Cultural Communications (4)**

Study of the process of communication, its various components, and how cultural, sociocultural, psychocultural, and environmental influences affect the outcome, including the role of non-verbal communication. Analysis of successful adaptation to new cultures, including developing a communication competence in a new culture and dealing with conflict. While the principles of cross cultural communication and adaptation are generic to all cultures, two cultural environments, China and Japan, will be studied in depth, to develop cultural self-awareness.

**MIM 577
International Business Negotiations (2)**

Examination of the issues and techniques of international negotiations in a variety of business settings. Particular emphasis is given to establishing and working within international partnerships. The course makes extensive use of actual negotiation simulations.

**MIM 578
Global Business Strategy (4)**

Identify and analyze factors that have accelerated the globalization of industries, define the concept of a global strategy, and examine the organizational issues that are central to enhancing the international competitiveness of a business enterprise. Address institutional contexts that facilitate and impede the formulation and implementation of global strategies. Explore the interdependence and interrelationships in three geopolitical areas: the United States, the Pacific Rim with emphasis on Greater China, Japan and Korea, and the European Economic Community.

**MIM 579
Field Study and Project Presentation (5)**

Field study in China and Japan for three weeks. Lectures at Waseda University in Tokyo, company visits, and cultural study. A capstone international business project is conducted with a global firm during the last term of the program.

Graduate School of Education

CAROL L. MACK, INTERIM DEAN
STEVEN K. LEE, INTERIM ASSOCIATE DEAN
608 SCHOOL OF EDUCATION BUILDING, 503-725-4619
www.ed.pdx.edu/

Graduate Programs:
Initial and Continuing Licenses
Early Childhood Education
Elementary Education
Middle level Education
**High School Education—In cooperation
with appropriate departments**
**Specialist Programs—Administrative
Studies (Pp-12); Postsecondary,
Adult and Continuing Education;
Educational Media; Counselor
Education (options: School, Community
Rehabilitation, Marriage and Family);
Literacy Education;
Special Education**
M.Ed., M.A., M.S.—Education
**M.A.T., M.S.T.—In cooperation with appropriate
departments**
**Ed.D.—Educational Leadership
(Options: Administration; Curriculum and
Instruction; Postsecondary Education;
Special and Counselor Education)**

The Graduate School of Education has a wide range of comprehensive programs leading to degrees and licensure. It is authorized by the Oregon Teacher Standards and Practices Commission to recommend teacher education and specialist candidates for both initial and continuing licenses.

All programs are fully accredited by the National Council for Accreditation of Teacher Education and by the Oregon Teacher Standards and Practices Commission. Although licensure requirements are incorporated into degree programs, changes by the Oregon Teacher Standards and Practices Commission during the life of this catalog may alter the requirements. Applicants for licenses must meet the Commission requirements in

force at the time of the license application.[†]

The school welcomes all students to join in helping us reach our mission of “meeting our communities’ lifelong educational needs.” The faculty and staff are committed to the following guiding principles as we strive to fulfill our mission:

1. We create and sustain educational environments that serve all students and address diverse needs.
2. We encourage and model exemplary programs and practices across the life span.
3. We build our programs on the human and cultural richness of the University’s urban setting.
4. We develop collaborative efforts that support our mission.
5. We challenge assumptions about our practice and accept the risks inherent in following our convictions.
6. We develop our programs to promote social justice, especially for groups that have been historically disenfranchised.
7. We strive to understand the relationships among culture, curriculum, and practice and the long-term implications for ecological sustainability.
8. We model thoughtful inquiry as the basis for sound decision-making.

Graduate programs

The Graduate School of Education offers the Doctor of Education, the Master of Education, Master of Arts, and Master of Science degrees in education. In addition,

[†] Because licensure rules are controlled by the Oregon Teacher Standards and Practices Commission, it is possible that licensure requirements may change. All persons expecting to be recommended for initial or continuing licenses should consult with an adviser or contact the Graduate School of Education Licensure Office, 503-725-4758.



the school coordinates the M.A.T./M.S.T. degree programs offered throughout the University.

Admission requirements

To be admitted to a graduate program in professional education, the applicant must first satisfy minimum University requirements listed on page 62. The applicant must also meet the admission requirements of specific degree, license, or specialist programs that the school is authorized to offer. Detailed information regarding admission requirements for the various graduate programs is available from the Graduate School of Education and on our Web page at www.ed.pdx.edu.

Degree requirements

University graduate degree requirements are listed on page 70. Specific Graduate School of Education requirements for degree, educational specialists, or license candidates are listed below. Upon successful completion of all University and Graduate School of Education requirements, the candidate will be awarded the appropriate degree and be recommended, upon request, for the appropriate license.

MASTER OF EDUCATION

The M.Ed. can be earned by students who have completed PSU's Graduate Teacher Education Program (GTEP). Additional coursework includes:

	Credits
CI 563 Teacher as Researcher	4
Electives (Approved by the adviser. Courses numbered 808 are not allowed.)	6
Total required	10

MASTER OF ARTS OR MASTER OF SCIENCE IN EDUCATION

The master's degrees in the Graduate School of Education are designed for thoughtful and caring practitioners who have the knowledge, skills, and desire to critically examine educational practices while working to improve them in ways that are conceptionally sound, ethically responsible, and culturally responsive.

Option I: Educational Policy, Foundations, and Administrative Studies

The Department of Educational Policy, Foundations, and Administrative Studies (EPFA) offers a department-wide Master of Arts and Master of Science degree with specialization in: educational leadership and postsecondary, adult, and continuing education.

The purpose of these programs is to prepare educational leaders who are able to respond positively, creatively, and proactively to the increasing diversity characterizing our metropolitan communities and to view diversity as a foundation upon which to build excellent educational programs for all learners.

All students admitted to the 45-credit master's program must complete four required courses from the Professional Studies Core. Other courses listed may be used as part of the specialization, in consultation with the student's adviser. Within each specialization students may elect to develop, with their advisers, a general program or theme (special emphasis or focus). Themes in educational leadership include: educational administration; educational policy analysis; leadership studies; educational foundations; early childhood administration; educational research and evaluation; and leadership in ecology, culture, and learning. Themes in postsecondary, adult, and continuing education include: adult learning and development; higher education; student services; and training and development.

	Credits
Professional studies core.....	16 (minimum)
Foundations of Education	4 (minimum)
†EPFA 551 Social Foundations of Education or EPFA 554 Philosophy of Education	
EPFA 555 Gender and Education	
EPFA 556 Urban Schools and At-Risk Status	
EPFA 552 History of Education	
EPFA 553 History of American Education	
EPFA 557 Cultural Pluralism and Urban Education Research and evaluation.....	4 (minimum)
†EPFA 511 Principles of Educational Research and Data Analysis I	
EPFA 512 Principles of Educational Research and Data Analysis II	
EPFA 513 Advanced Research Designs and Data Analysis	
EPFA 514 Educational Measurement and Assessment	
EPFA 515 Program Evaluation	
Organizational systems.....	4 (minimum)
EPFA 558 Educational Leadership	
†EPFA 561 Staff Development: Planning, Implementation, and Evaluation	
EPFA 563 Human Relations in Educational Organizations	
†EPFA 568 Educational Organization and Administration	
Adult development	4 (minimum)
†EPFA 520 Developmental Perspectives on Adult Learning	
EPFA 521 Adult Learning	
EPFA 522 Motivating Adult Learners	
EPFA 523 Assessing Adult Learning	

In consultation with the adviser, students must complete the requirements for their area of specialization (and theme) and select one of two options to complete the requirements for the master's degree (a thesis or a comprehensive examination). The thesis requires an oral examination in addition to the written product. Courses

numbered 808 are not allowed. Further information about each of these areas of specialization may be obtained from the Graduate School of Education.

Option II: Curriculum and Instruction

The M.A./M.S. degree in education in curriculum and instruction emphasizes professional education. It is designed to accommodate students in teacher education and educational specialists.

Requirements for the degree are:

1. A program of study consisting of 45 graduate-level credits approved by the student's graduate adviser and the department chair, to include:
 - a. A minimum of 24 credits in curriculum and instruction.
 - b. A core of studies encompassing preparation in the areas of teaching and learning, curriculum, research and evaluation, human relations, and multicultural education. The precise nature of this core of studies is specified by the department. Degree plans are written in cooperation with an assigned adviser.
 - c. Eighty-five percent of the required credits must be 500 level.
 - d. No more than 6 credits may be 800-level courses numbers, if approved by the adviser prior to being used for a master's program. Courses numbered 808 are not allowed.
 - e. With adviser and department chair approval, up to 15 credits may be transferred in from other institutions.
 - f. With adviser and department chair approval, up to 15 credits from PSU may be included in the program.
2. The student will select one of three options to complete the requirements for the master's degree: (1) an independent action research project, (2) a thesis, or (3) a written comprehensive examination. The thesis requires an oral examination in addition to the written product.

Core Classes

- CI 561 Advanced Educational Psychology (3)
- CI 565 Theoretical Models of Curriculum (3)
- CI 567 Curriculum and Culture (3)
- CI 580 Theories of Instruction (3)
- CI 581 Issues in Education (3)
- CI 560 Action Research: Proposal (3)
- Coun 525 Guidance for Classroom Teachers (3)
- CI 501 Action Research Project (3)

Option III: Counselor Education

All students who are pursuing a master's degree in counselor education must complete a 72 credit program. This program satisfies University and Graduate School of Education requirements and is part of the requirements needed prior to taking the NCE examination of the National Board for Certified Counselors (NBCC) or of the Commission on Rehabilitation Counselor

† Required course.

Certification (CRCC). This program is also approved by the Oregon Board of Licensed Professional Counselors and Therapists and the Teacher Standards and Practices Commission of Oregon. Students should work with their advisers in the process of understanding the licensure requirements of both of these credentialing groups.

The primary purpose of the counselor education program is to educate competent counselors for public and private schools, community agencies and rehabilitation facilities. The program is designed to strengthen competencies in the behavioral sciences and to broaden the students' background in human growth and development, counseling theories and interventions, interpersonal relations, individual and group processes, career and life-style planning, assessment and treatment planning, research and program evaluation, and multicultural aspects of counseling.

Students may pursue one of four areas of specialization within the counselor education program: community counseling, rehabilitation counseling, and school counseling; and couples, marriage, and family counseling.

Note: Students in all four specializations must complete Coun 541 Introduction to Counseling and one course in psychopathology prior to admission or before enrollment in the fall term of the first sequence of coursework. Additional prerequisites are specified for students in the school counseling specialization (see "Licensure" on page 225.). Courses numbered 808 are not allowed.

	Credits
Core courses	
Coun 504 Internship	6
Coun 507 Seminar: Current Issues	3
Coun 509 Practicum: Group Counseling	1
Coun 509 Practicum: Counseling	6
Coun 531 Foundations of Substance Abuse Counseling.....	3
Coun 543 Interpersonal Relations	3
Coun 551 Theories and Interventions I	3
Coun 552 Theories and Interventions II	3
Coun 566 Appraisal Instruments	1
Coun 567 Using Tests in Counseling	3
†Coun 568 Career and Lifestyle Planning	3
Coun 569 Developmental Foundations of Counseling.....	3
Coun 570 Legal and Ethical Issues.....	3
Coun 571 Group Counseling	3
Coun 580 Supervision.....	1
Coun 581 Multicultural Perspectives in Counseling	3
Coun 582 Research and Program Evaluation in Counseling.....	3
Coun 585 Diagnosis and Treatment Planning I...3	
‡Coun 594 Occupational Analysis/Vocational Evaluation	3

Community counseling specialization.

The community counseling specialization prepares individuals to work as counselors in private and public community agencies,

community colleges, universities, employee assistance programs or private practice settings. Prior experience in a helping relationship is recommended for individuals pursuing this specialization. Depending upon one's choice of setting, the counselor should prepare to offer diagnostic and intervention services to the populations seeking counseling.

The program of study leading to an M.A./M.S. in education with a community counseling specialization must include the following courses:

	Credits
Core coursework	54
Coun 553 Advanced Therapeutic Strategies.....	3
Coun 575 Foundations of Couples, Marriage, and Family Counseling	3
Coun 586 Psychopharmacology and Mental Illness	3
Coun 587 Foundations of Mental Health Services	3
Coun 588 Diagnosis and Treatment Planning II	3
Electives	3
Total	72

Rehabilitation counseling

specialization. The rehabilitation counseling specialization prepares individuals to work in a variety of settings such as the state/federal rehabilitation system, public and private rehabilitation facilities, and supported employment projects, with clients needing vocational and psychosocial rehabilitation services. Emphasis is on the development of effective interpersonal counseling skills, vocational development, and job placement skills in order to assist clients with chronic and severe disabilities in improving the quality of their lives via self-sufficiency and economic independence.

Students seeking national certification from the Commission on Rehabilitation Counselor Certification (CRCC) as rehabilitation counselors or state certification by the Oregon Worker's Compensation Department should complete the following 72-credit program:

	Credits
Core coursework	54
Coun 583 Job Placement and Training.....	3
Coun 590 Foundations of Rehabilitation Counseling.....	3
Coun 591 Medical Aspects of Disability	3
Coun 592 Psychosocial Aspects of Disability.....	3
Coun 593 Case Management	3
Coun 595 Contemporary Issues and Applications in Rehabilitation Counseling.....	3
Total	72

Couples, marriage, and family counseling specialization.

The couples, marriage, and family counseling specialization prepares individuals to work with couples and families in mental health centers, community agencies, and other settings in which counselors are expected to assist clients presenting with couples, family, or relationship issues. Emphasis is placed on

teaching counselors systemic assessment and intervention in the counseling process.

The program of study leading to an M.A. or M.S. in education with the couples, marriage, and family specialization requires the completion of the following 72 credits:

	Credits
Core coursework.....	54
Coun 572 Systemic Perspectives on Human Sexuality	3
Coun 573 Contemporary Couples, Marriage, and Family Systems.....	2
§Coun 574 Family Life Cycle and Transitions	2
Coun 575 Foundations of Couples, Marriage, and Family Counseling	3
§Coun 577 Family Therapy.....	3
§Coun 578 Couples Therapy	3
§Coun 579 Advanced Systemic Instructions: Couples and Families	2
Total	72

School counseling specialization.

The school counseling specialization prepares individuals to work as counselors in school settings. Emphasis is placed on preparing school counselors to work with students to support them in the process of achieving academic, career, and personal/social success. The 72 credit program is for individuals who enter the program with two years of teaching experience. Students who cannot document two years of teaching experience must complete a 6-credit, 200- hour effective teaching sequence to obtain licensure as a school counselor (see "Licensure" on page 225.)

	Credits
Core coursework.....	54
Coun 527 Counseling Individuals with Diverse Needs	3
Coun 545 Youth at Risk	3
Coun 555 Counseling Children and Youth.....	3
Coun 576 Parents, Families, and Communities in Schools.....	3
Coun 589 Action Research in Counseling	3
Coun 596 Foundations of School Counseling	3
Total	72

Option IV: Special Education

The Graduate School of Education offers comprehensive programs for the professional preparation of students in special education. A master's degree in special education may be completed in conjunction with state licensure in special education or may be completed independently. For licensing information see "Programs Leading to Licensure: Special Education" on Special Education Licensure Programs.

Students completing a master's degree must complete the special education master's degree core program. The master's core must total at least 12 credits beyond initial special education licensure. Courses numbered 808 are not allowed. The master's degree without Oregon licensure must total at least 45 credits (which includes the master's core).

† Not required for rehabilitation counseling specialization.
‡ Only required for rehabilitation counseling specialization.
§ Coun 573 and 575 recommended prior to enrolling in these courses.

Master's core program. Students must take SpEd 590 Applied Behavioral Research in Special Education and SpEd 591 Issues in Special Education prior to beginning the capstone experience. A student must complete a capstone experience by choosing either the completion of a special project or a master's thesis. In addition to the completion of a written product, the student must present his/her project/thesis to the faculty. Students are required to enroll in 6 credits of Special Project (SpEd 506) or Thesis (SpEd 503).

The master's core includes:

SpEd 590 Applied Behavioral Research in Special Education.....	3
SpEd 591 Issues in Special Education.....	3
SpEd 503 Thesis or SpEd 506 Special Project	6
Total	12

Option V: Educational Media/Librarianship

The PSU program in educational media/librarianship focuses on the preparation of the school library media specialist for professional positions in K-12 library media centers. The program incorporates all of the coursework that is part of the educational media/librarianship endorsement plus a core of studies representing research and evaluation, human relations, and other current topics that apply to the educational media field. Students work closely with an adviser to plan a sequence of courses that meet program requirements and draw on their own specific areas of interest.

The program of study leading to an M.A. or M.S. in educational media/librarianship requires the completion of the following credits:

	Credits
Lib 509 Initial Practicum	3
Lib 530 Literature Promotion Programs K-12	3
Lib 534 Administration of the School Library Media Center.....	3
Lib 536 Design and Production of Instructional Media.....	3
Lib 541 Reference and Information Systems and Services	4
Lib 542 Collection Development and Evaluation ...	3
Lib 547 Library Media Instructional Programs K-123	4
Lib 548 Organization of Library Media Collections4	3
Lib 561, 562, or 563 Practicum	3
Lib 573 Advanced Methods and Procedures in School Library/Media Centers	3
Lib 574 Research Strategies for Library Media Specialists.....	3
Lib 575 Directed Field Expertise.....	3
Lib 576 Planning and Evaluation of Library Media Programs.....	3
Electives	4

In consultation with the adviser, students must complete the course requirements and select one of two options to complete the requirements for the master's degree (a thesis or comprehensive examination). The thesis requires an oral examination in addition to the written product. Courses numbered 808 are not allowed. For additional information, see www.ceed.pdx.edu/lib_media.

Doctor of Education in educational leadership. The Ed.D. in educational leadership, offered by the Graduate School of Education, is the school's highest professional degree. It is designed to help formal and informal educational leaders develop their capacity to provide leadership that makes a positive and significant difference in the professional fields and diverse communities they serve. Emphasis is on the development of excellent professional performance as leaders in education in: public and private schools; community and four-year colleges and universities; community, state, and federal educational agencies; and nonschool settings, where appropriate.

Four options are available to students: administration; curriculum and instruction; postsecondary education; and special and counselor education. Each student is admitted to one of the four specializations. Students interested in sustainability education may request admission through any of the four specializations.

General requirements. A minimum of 135 credits is required beyond the baccalaureate. Students must either satisfy degree requirements in place at the time of admission or, at the student's option, may elect to apply requirements adopted after admission. Continuous enrollment is required.

A minimum of 72 credits must be completed at Portland State University after admission to the doctoral program, to include the leadership core, specialization, and dissertation. Early in the program the student and adviser jointly develop an individual program of study, approved by the doctoral program coordinator. Courses numbered 808 are not allowed.

	Credits
Leadership core	
Ed 620 Doctoral Studies Proseminar	4
Ed 630 Principles and Practices of Learning.....	4
Ed 640 Organizational Leadership Theory and Research in Education.....	4
Ed 650 Educational Policy and Politics	4
Ed 660 Foundations of Research Paradigms and Methods.....	4
Ed 661 Qualitative Research Methods in Education	4
Ed 662 Quantitative Research Methods in Education	4
Specialization.....	24-36

Administration	
Required Courses	8
EPFA 610 Theory and Research in Educational Administration (4)	
EPFA 610 Social, Historical, Philosophical, and Cultural Foundations of Educational Administration (4)	
Integrative Themes.....	16
The student, in consultation with the adviser, will develop a specialization in one of the following integrative themes. It is possible to use courses from more than one theme in developing a new integrated theme.	

District-level Administration. Coursework for the superintendent license may be used in this theme.

School-level Administration. Coursework for the administrator license may be used in this theme.

Educational Policy. This theme focuses on policy development and political processes, building on a solid foundation in educational sociology, history, philosophy, research, evaluation, diversity, and pluralism.

	Total	24
Curriculum and Instruction		
Required Courses	3	
CI 610 Research and Resources in Curriculum and Instruction (3)		
Integrative Themes for Change.....	30-33	
The student, in consultation with the adviser, either will develop an integrative theme to be proposed as their specialization credits or select an existing specialization, such as reading and language arts, or early childhood education. Examples of integrative themes are: inclusive/multicultural education, mid-level education, mathematics or social studies education, and teacher education/teachers' professional development.		
	Total	33-36

Postsecondary Education		
Required Courses	12	
EPFA 607 Advanced Postsecondary Seminar (4)		
EPFA 520 Developmental Perspectives on Adult Learning (4)		
EPFA 538 Contemporary Issues in Postsecondary Education (4)		
Integrative Themes.....	12	
The student, in consultation with the adviser, will develop an integrative theme, for example: higher education; adult learning and development; student services; or training and development. Examples of courses that may be used in a program are:		
EPFA 521 Adult Learning (4)		
EPFA 522 Motivating Adult Learners (4)		
EPFA 525 Student Services in Higher Education (4)		
EPFA 526 Facilitating Student Success in Postsecondary Education (4)		
EPFA 533 Planning and Budgeting in Postsecondary Education (4)		
EPFA 537 Policy and Governance in Postsecondary Education (4)		
EPFA 541 The Community College (4)		
Independent Study (variable credit)		
	Total	24

Special Education and Counselor Education		
Required Courses		
SpEd/Coun 607 Problem-centered Studies in Special and Counselor Education: Seminar I, II, III	18	
SpEd/Coun 609 Internship [†]	12	
in College Teaching (3-6) and/or in Pre-service Supervision (3-6) and/or in School Settings (3-6) and/or in Community Agencies (3-6)		
	Total	30

Dissertation. The doctoral dissertation represents original and independent inquiry that is a contribution to knowledge or is of value for educational practice. Students may elect to employ one of several different approved inquiry strategies, including—but not limited to—traditional research designs and methods, ethnographic and descriptive case studies, policy analyses, product development and field testing, and program evaluation. A minimum of 18 credits is directed toward the dissertation project.

Residency. As is required for all doctoral degrees at PSU, candidates for the Ed.D.

[†] Required course.

[‡] Minimum of 12 credits. As part of each internship, students, and faculty will attend an internship seminar.

degree fulfill the residency requirement after admission to the doctoral program. Candidates must register for a minimum of three consecutive terms of full-time approved graduate study at PSU (at least 9 credits per term) through either coursework, the study of practice (i.e., field-based work), or dissertation credits. Foreign language competency is not required for the Ed.D. degree.

The cognate field (where required 12-18 credits). Students in administration or postsecondary, adult, and continuing education must complete work in a field(s) outside the Graduate School of Education that complement(s) their degree program. The cognate might be used for several purposes: to gain further knowledge about theories and conceptual frameworks developed by those in other fields that have been or might be applied to education; to develop in-depth knowledge of and skill with specific inquiry methods; and to gain greater breadth in related fields. The cognate credits for the special and counselor education program are as follows: Students with a M.A./M.S. in special education must take 12-15 credits of coursework in counselor education. Students with an M.A./M.S. in counselor education must take 12-15 credits of coursework in special education. A list of preferred coursework is available from the Department of Special and Counselor Education.

Electives. Students may include up to 57 credits as electives. Electives might include courses taken as part of a master's degree program, additional education courses taken by those coming from fields other than education, and additional cognate work.

Comprehensive examination. Two comprehensive examinations cover separately the leadership core and the specialization. The first, taken when the student has completed the leadership core, is designed to assess a student's ability to analyze, synthesize, and apply frameworks from the leadership core to a topic of significance. The second, focused on the specialization, is designed to assess a student's ability to integrate and apply theoretical concepts and research results that inform the dissertation topic. Students have the alternative of writing academic papers for each examination. These papers are presented and defended to a faculty committee in a public meeting.

Licensure

Testing requirements for program completion and Oregon's test pass rates. Federal regulations require that potential applicants and the general public are informed of the following:

In Oregon, a system of multiple measures is used to determine the status of program completers, who can then be recommended to the Teacher Standards and Practices Commission for licensure. One component of this system requires the educator to pass both a basic skills test and a battery of subject matter tests. For basic skills testing the educator may choose to take the California Basic Educational Skills Test (CBEST) or the PRAXIS I: Pre-Professional Skills Test (PPST). Authorizations in early childhood, elementary, and middle level teaching require passing scores on the Oregon Educator Licensure Assessments (ORELA) Multiple Subjects Examination. The ORELA includes two subtests that consist of multiple choice and constructed response items, which assess knowledge in language arts, social science, the arts, mathematics, science, health, and physical education. Secondary educators must pass PRAXIS II tests in their specific subject matter. Generally these are two or three tests in each subject matter endorsement area in some combination of multiple choice and constructed response formats.

Because passing of basic skills and subject matter tests is required for program completion in Oregon, the state pass rate is 100 percent. Those who do not pass the required tests are not considered program completers and are not eligible for Initial Teaching Licenses.

Program information for the 2005-2006 academic year. The following information was submitted as part of the Title II federal report:

The total number of students enrolled during 2005-2006 was 722. Nineteen full-time faculty and 54 part-time faculty in professional education supervised 307 students enrolled in programs of supervised student teaching for a student/faculty ratio of 4:1. The average number of hours per week required in supervised student teaching was 30 over a period of 20 weeks for a total of 600 hours. The teacher preparation program is currently approved by the state and is not designated as "low performing."

Undergraduate programs

Undergraduate students interested in pursuing a career in teaching should refer to the "Education Programs" section in this catalog (page 143) for information regarding recommended preparatory programs for elementary and secondary teachers.

Graduate Teacher Education Program

Programs in early childhood education (age 3-grade 4), elementary education (grades 3-8), mid-level education (grades 5-9), high school education (grades 7-12), special education, and library/media are offered for students who wish to teach in the public schools. Successful completion of these programs culminates in a recommendation to Oregon's Teacher Standards and Practices Commission for the Initial Teaching License.

Admission. The Graduate School of Education has a number of general requirements for admission to its programs in teacher education including, but not limited to:

1. Bachelor's degree from an accredited institution
2. Admission to PSU
3. Cumulative 3.00 GPA
4. Psy 311 Human Development (or equivalent)
5. C-BEST (California Basic Educational Skills Test) or PRAXIS-PPST (Pre-professional Skills Test)
6. PRAXIS Examinations—*Early Childhood, Elementary, and Mid-level: MSAT (Multiple Subjects Assessment for Teachers) from the Core Battery Mid-level and High School: Specialty Area Test*
7. Departmental recommendation (secondary only)
8. Other prerequisites (Early Childhood/Elementary only): Art 312, Mus 381, Lib 428, and Mth 211, 212 (8 credits minimum)
9. Proficiency in the use of computers and Ed 420/520 Introduction to Education and Society (or the equivalent) are strongly recommended.

Specific program admission requirements and application materials are available in each department in the Graduate School of Education.

Program requirements:	
Early childhood and elementary	Credits
CI 509 Practicum.....	3
CI 510 Professional Development	2
CI 510 Education Law for Teachers	1
CI 511 Classroom Management	3
CI 512 Teaching and Learning	3
CI 513 Classroom Instruction and Technology	5
CI 514 Multicultural and Urban Education	3
CI 515 The Reflective Practitioner.....	3
CI 516 Integrated Methods I: Reading/Language Arts	5
CI 517 Integrated Methods II: Health, Science, Soc. Studies	5
CI 518 Integrated Methods III: Art/Math/Music/PE	5
CI 550 or CI 552 Student Teaching I	5
CI 551 or CI 553 Student Teaching II	10
SpEd 418/518 Survey of Exceptional Learners	3
Total	56

Program requirements:	
Mid-level and high school	Credits
CI 509 Practicum: Field-Centered Activities.....	3
CI 510 Professional Development.....	2
CI 510 Engaging High School Learners.....	3
CI 510 Engaging Middle School Learners.....	3
CI 510 Education Law for Teachers.....	1
CI 511 Classroom Management.....	3
CI 512 Teaching and Learning.....	3
CI 513 Classroom Instruction and Technology.....	5
CI 514 Multicultural and Urban Education.....	3
CI 515 The Reflective Practitioner.....	3
CI 519 Special Secondary Methods.....	3
CI 521 Reading and Composition in the Content Areas.....	3
CI 548 Advanced Secondary Methods: Specialty Areas.....	3
CI 554 Student Teaching I.....	5
CI 555 Student Teaching II.....	10
SpEd 418/518 Survey of Exceptional Learners.....	3
Total	56

Secondary education at Portland State University is available in the following endorsement areas: art, biology, business, chemistry, drama, foreign languages, health education, integrated science, language arts, mathematics, music, physical education, physics, social studies, and speech. Initial subject matter endorsement requirements are outlined in the appropriate departmental section of this catalog.

Advising in subject matter endorsement areas is through the appropriate academic department. Students completing the secondary education program are eligible to teach in grades 7-12 in integrated subjects and departmental assignments. Students in the following endorsement areas are eligible to teach in grades K-12, provided that they have completed student teaching and/or practicum in two authorization levels (early childhood/elementary and middle-level/high school): Art, music, ESL/bilingual education, physical education, and special education. Students who wish to teach at the middle level (grades 5-9) must complete a practicum, a work sample, and submit passing scores on the ORELA and Praxis specialty area examinations. For more details, visit the office of the Graduate Teacher Education Program.

Dual elementary education/special educator licensure with Master's Degree.

The inclusive elementary educators program is a full-time dual elementary/special educator endorsement option of integrated coursework and field experiences. Students with these two endorsements are licensed to teach early childhood and elementary (pre K-8) grades and special education (K-12) grades. Faculty from both curriculum and instruction and special education are instructors in the program. This program reflects the rapidly changing nature of America's schools, where students with disabilities are being integrated into regular classrooms with increasing frequency.

Dual mid-level and/or secondary and special education with master's degree.

The Graduate School of Education offers a dual licensure program in mid-level and/or secondary and special education that also includes a master's degree. This full-time program of integrated coursework and field experiences is completed over five terms. Students are licensed to teach in their content area (e.g. math, social studies, English, science, etc.) at mid-level and/or high school as well as licensed as special educators. Students also receive additional instruction in supporting English language learners. Faculty from both the curriculum and instruction and the special education programs teach in the program. The program reflects the rapidly changing needs of America's schools where a wide range of diverse learners are found in each classroom.

Early Childhood Education (ECE). The Graduate School of Education offers graduate-level courses for professionals seeking to strengthen their understanding and skills in the area of early childhood education. This coursework focus is appropriate for those pursuing a master's degree in curriculum and instruction with a specialization in ECE. These courses are also appropriate, though not currently required, for those who wish to add the ECE authorization to an elementary license. Available courses are:

	Credits
CI 570 Child Development and Education.....	3
CI 571 Play: Curriculum in Early Childhood Education.....	3
CI 572 Language and Literacy in Early Childhood Education.....	3
CI 573 Assessment in Early Childhood Education...3	
EPFA 546 Early Childhood Education: Relationships with Home and Society.....	3
SpEd 580 Accommodating Children with Special Needs in Early Childhood Education.....	3
CI 509 Practicum in Early Childhood Education.....	3

International Teacher Education Program.

The Graduate School of Education offers an International Teacher Education Program for students who hold teaching licenses in other countries and who are seeking Oregon teaching licenses. It is designed to meet the Initial Teaching Licensure requirements set forth by Oregon's Teacher Standards and Practices Commission. Through an individualized planned program, students fulfill all of the requirements stated above for the Graduate Teacher Education Program through either equivalency, substitution, or current coursework/classroom experiences. A 6-credit student teaching experience is required, along with a minimum of 7 credits of coursework taken at PSU. For admissions procedures, testing requirements, and an appointment with program faculty, please call the GSE receptionist at 503-725-4619.

Bilingual Teacher Pathway (BTP) Program.

The Graduate School of Education offers a preparation program for bilingual/bicultural assistants in partner school districts seeking initial teacher licensure and an ESL/Bilingual Endorsement. The BTP core consists of 40 credits taken over two-and-a-half years. Additionally elementary licensure students complete 22 credits of prerequisite classes; high school licensure students complete up to 22 credits of content-area and prerequisite classes. Students may apply at the undergraduate (minimum 90 credits) or graduate level. BTP is a part-time program offering evening and weekend classes. For more information and school district partners, please see our Web site at <http://www.btp.pdx.edu>.

Initial K-12 Teaching License in Educational Media

Students have the option of selecting a program leading to a K-12 Initial Teaching License in educational media. The program includes educational media and education coursework, and student teaching experience in an educational media center. This enables the student to be a K-12 library media specialist, but not a classroom teacher.

Admission

The Graduate School of Education and Continuing Education/School of Education have a number of general requirements for admission to this licensure program:

- ◆ Bachelor's degree from an accredited institution
- ◆ Admission to PSU
- ◆ Cumulative 3.00 GPA
- ◆ Psy 311 Human Development (or equivalent)
- ◆ CI 432 Computer Applications for the Classroom (or equivalent)
- ◆ Lib 428/528 Children's Literature (or equivalent)
- ◆ Lib 429/529 Young Adult Literature (or equivalent)
- ◆ SpEd 418/518 Survey of Exceptional Learner
- ◆ C-BEST (California Basic Educational Skills Test) or PRAXIS PPST (Pre-Professional Skills Test)
- ◆ Ed 420/520 Introduction to Education and Society is highly recommended

Program Requirements	Credits
CI 511 Classroom Management: EC/Elementary.....	3
CI 511 Classroom Management: Mid Level/Secondary.....	3
CI 512 Teaching and Learning: Elementary.....	3
CI 513 Instruction and Technology: Secondary.....	5
CI 514 Multicultural and Urban Education.....	3
SPED 518 Survey of Exceptional Learner.....	3
Lib 530 Literature Promotion K-12.....	3
Lib 534 Administration of School Library Media Center.....	3
Lib 536 Design and Production of Instructional Media.....	3

Lib 541 Reference and Information Systems and Services.....	4
Lib 542 Collection Development and Evaluation.....	3
Lib 547 Library Media Instructional Programs.....	3
Lib 548 Organization of Library Media Collections.....	4
EPFA 510 School Law.....	1
Lib 510 Student Teaching I (Elementary or Secondary).....	5
Lib 510 Student Teaching II (opposite level of STI).....	10
Total	59

Students must score above Oregon's cut-off point on the Library Media Praxis Test for PSU to recommend them to TSPC.

ESL/Bilingual endorsement

The Graduate School of Education offers a program leading to an ESL/Bilingual endorsement for teachers already holding a valid Oregon teaching license. The authorized program is as follows:

	Credits
Ling 422/522 How Do People Learn a Second Language.....	3
Ling 423/523 Taking Stock: Assessment and Evaluation in Programs with Language Minority Students.....	2
CI 443/543 Effective Teaching Strategies and Materials for Working with Linguistically and Culturally Diverse Students.....	3
SpEd 455/555 Working with LEP Children Who Have Special Needs.....	2
EPFA 465/565 ELL School/Community Relations.....	3
EPFA 466/566 Impact of Language and Culture in the Classroom.....	3
EPFA 467/567 ESL/Bilingual Program Design and Models.....	3
CI 509 ESL Bilingual Practicum.....	3
Total	22

READOregon

(previously Collaborative Reading Education and Distance Education)

The READOregon program is a collaborative effort of five universities in the Oregon University System—Eastern Oregon University, Oregon State University, Portland State University, Southern Oregon University, and Western Oregon University—in cooperation with OUS departments of distance and continuing education.

The READOregon program consists of two collaborative distance education programs available to teachers statewide:

- ◆ Reading Specialist Endorsement Program—graduate-level, distance-delivered 24-credit reading specialist endorsement program.
- ◆ Literacy Education Course of Study—graduate-level, distance-delivered, 12-credit literacy education certificate of completion for general classroom teachers.

The goal of both programs is to improve the reading abilities of students in Oregon's schools. READOregon modules and courses were designed to be used toward a reading specialist endorsement, a concentration in a master's degree pro-

gram, and/or a component of professional development in the area of literacy.

Please visit the Oregon University Systems Web site for more specific information about the READOregon program: www.readoregon.org.

For more information about Portland State University's READOregon courses and admission, please visit our Web site at www.ceed.pdx.edu/readoregon or contact Julie Puris at purisj@pdx.edu.

Educational Media/Librarianship Endorsement

The Graduate School of Education offers a graduate-level program leading to a recommendation for an educational media/librarianship endorsement. The Educational Media/Librarianship Endorsement Program consists of a comprehensive set of coursework (29 credits) that prepares students to be competent PreK-12 educational library media specialists. Recommendation for the endorsement, to be added to a current teaching license, is made to Teacher Standards and Practices Commission (TSPC) upon successful completion of this program and receiving passing scores on the Educational Media Praxis Exam.

Completion of the following coursework, the PRAXIS Specialty Area Exam in Educational Media, and two 90-hour practica are required for an Oregon educational media/librarianship endorsement.

	Credits
Lib 509 Initial Practicum.....	3
Lib 530 Literature Promotion Programs K-12.....	3
Lib 534 Administration of the School Library Media Center.....	3
Lib 536 Design and Production of Instructional Media.....	3
Lib 541 Reference and Information Systems and Services.....	4
Lib 542 Collection Development and Evaluation.....	3
Lib 547 Library Media Instructional Programs K-12.....	3
Lib 548 Organization of Library Media Collections.....	4
Lib 561, 562, or 563 Practicum.....	3

For information, see www.ceed.pdx.edu/lib_media.

Continuing Teaching License

The Continuing Teaching License Program at Portland State University consists of three one-credit seminars to be taken before, during, and after students complete 6 credits of coursework in a specialized area of study with approval of their adviser. Students will develop a professional portfolio designed to demonstrate their proficiency in the ten advanced competencies required by the state of Oregon for continuing licensure. The final review of the candidate's readiness for a continu-

ing license is cumulative, holistic, and based—at least in part—on the adviser's intimate knowledge of the candidate's development over an extended period of time.

Coursework includes:

	Credits
CI 509 CTL Focused Professional Development: Building the Professional Portfolio.....	1
CI 510 CTL Seminar I: Reflection-in-Action: Beginning the CTL Program.....	2
CI 510 CTL Seminar II.....	1
CI 510 CTL Seminar III: Reflection-in-Action: Compiling and Presenting the Professional Portfolio.....	1

For additional information, see www.ceed.pdx.edu/ctl.

Continuing licensure. The Oregon Teacher Standards and Practices Commission (TSPC) issues two licenses, the initial and continuing. Portland State University's Curriculum and Instruction Department offers programs in both the initial and continuing license for licensed Oregon teachers who have completed an initial teacher education program. Oregon teachers who have obtained initial teacher licensure have up to six years to complete requirements for the continuing license. For information about the continuing license, please contact the Graduate School of Education (503-725-4619).

Educational Administration

Three authorized programs lead to institutional recommendations for initial and continuing licensure of qualified persons for positions as school principals, assistant principals, school district superintendents, and assistant superintendents. All students are required to have an approved program of study, as described below, filed with the Graduate School of Education. Admission requirements and detailed program information for each program are available from the Department of Educational Policy, Foundations, and Administrative Studies (EPFA).

The Initial Administrator License Program, referred to as Leadership 2000, prepares individuals for positions as school principals and assistant principals. This license requires completion of a master's degree and three years of teaching experience. The licensure program may be completed either as part of a master's degree in educational administration or subsequent to the completion of a master's degree in the professions from a regionally accredited institution. The initial administrator curriculum includes:

	Credits
EPFA 570 Human Relations and Educational Foundations.....	4
EPFA 571 Teaching, Learning, and Curriculum.....	4
EPFA 572 Human Resource Development and Organizational Change.....	4

EPFA 509 Administrative Practicum.....	9
EPFA 507 Seminar	3
Total	24

The Continuing Administrator/Initial Superintendent Licensure Program, referred to as the Executive School Leadership Program, prepares individuals for positions as continuing school administrators and as initial school district superintendents. This program assumes completion of the initial administrator program or its equivalent, and one year of full-time study (or its equivalent) in a planned licensure program beyond the master's degree.

There are two options for the completion of this program: Option I includes a summer program (three summers followed by practicum completed during each academic year); Option II includes an academic year program (two years).

Credits

EPFA 576 Education, Community and Society	4
EPFA 577 Curricular and Instructional Leadership.....	4
EPFA 578 Communication and Conflict Management in Educational Organizations.....	4
EPFA 579 Standards-Based Reform and Student Learning.....	4
EPFA 580 District and School Policy and Operations	4
EPFA 581 Legal and Financial Aspects of Education.....	4
EPFA 507 Special Topics.....	2
EPFA 507 Special Topics.....	2

The Continuing License for Superintendent Program builds on the knowledge, skills, and attitudes developed in the Continuing Administrator/Initial Superintendent Program. The curriculum consists of six special problems seminars. Much of this curriculum will be delivered electronically. Students will also meet regularly to discuss key issues of educational reform implementation.

Credits

EPFA 501 Research: Assessing Effectiveness of Instructional Programs	4
EPFA 506 School Board, District, and Community Collaboration.....	4
EPFA 506 Managing Conflict and Community Relations.....	4
EPFA 506 Analysis and Evaluation of District Policy	4
EPFA 506 Educational Planning and Facilitating Management.....	4
EPFA 510 Politics and Policy Processes in Education	4

Students who completed an earlier licensure program (Basic and Standard Administrator, or Basic and Standard Superintendent) should consult with the Department of Educational Policy, Foundations, and Administrative Studies to determine what new license requirements must be met.

Reading

The literacy education faculty have designed a program which works to develop classroom teachers, reading specialists, and district reading personnel whose practice grows out of a solid grounding in theory and research and reflects the best current thinking in the field. This includes consideration of:

- ◆ Best practices and national and literacy standards.
- ◆ The variety of methodologies and resources available for creating classroom literacy environments.
- ◆ Principles and practices of working with students needing extra help with literacy.
- ◆ Authentic assessment practices.

Completion of the following coursework, the PRAXIS Specialty Area Exam in Reading, and a 90 hour practicum are required for an Oregon reading endorsement. Courses numbered 808 are not allowed.

Core

Credits

†CI 522 Literacy Foundations	4
†CI 474/574 Assessing and Instructing Learners with Literacy Problems	4
CI 529 School Reading Program Leadership	3
Lib 532 Multicultural Literature K-12.....	3
SpEd 563 Advanced techniques of reading.....	3

Endorsement levels

Early childhood and elementary

CI 472/572 Language and Literacy in Early Childhood Education.....	3
†CI 547 Advanced Elementary Methods: Reading.....	4
Elective.....	3

Elementary and mid-level

CI 523 Language Arts in Middle Schools.....	4
CI 521 Reading and Composition in the Content Areas.....	3
†CI 547 Advanced Elementary Methods: Reading.....	4

Mid-level and secondary

†CI 548 and CI 509 Advanced Secondary Methods: Reading and Composition and Practicum	4
Lib 529 Young Adult Literature	3
Elective.....	3

School Counseling Licensing

The school counseling specialization has three options: track I, track II, and licensure only.

Track I. The program consists of 72 credits of study leading to an M.A. or M.S. in education: school counseling specialization. The program is for individuals with two years' teaching experience. Upon completion of the program, students are recommended for the Initial School Counselor License.

After graduation, the Continuing License requires experience as a school counselor, and completion of a portfolio documenting professional development as defined by OAR 584-070-0090.

Track II. Track II is designed for students who cannot document two years of successful experience as a licensed school teacher. The program consists of 72 credits of study leading to the approved M.A./M.S. in counseling in education: school counseling specialization. Since track II is designed for individuals who cannot document two years' teaching experience, TSPC requires a 6-credit, 200-clock-hour teaching requirement as part of their program.

Licensure only. Students enrolled in the licensure only option must be graduates from an accredited master's program in counseling, psychology, or social work that required a clinical practicum focused on individual and group counseling skills. Graduate degrees in teaching or education are not accepted. The program is designed to meet the requirements for the Initial School Counselor License approved by TSPC. Students must complete 33 credits in the school counseling core to be eligible for the Initial School Counselor license. Continuing License requires experience as a school counselor and documentation of professional development as defined by OAR 584-070-0090.

All students in the licensure only option must take the school counseling specialization core courses. The Teacher Standards and Practices Commission requires school counselors to have two years' experience as a licensed teacher in a public school setting. Individuals in need of the teaching requirement must take the six-credit, 200-clock-hour teaching experience sequence.

All students (track I, track II, and licensure only) are required to:

- ◆ Pass the California Basic Educational Skills Test (CBEST) with a score of 123+ for entrance into the program.
- ◆ Complete a school counseling action research or related project and professional portfolio documenting the knowledge, skills, and competencies required by TSPC.
- ◆ Complete a 600-clock-hour internship; internship includes placement in an early childhood/elementary and/or in a middle/high school setting.
- ◆ Have two years' teaching experience. Students without two years' teaching experience must complete a 200-hour teaching experience practicum in a year-long 6-credit course sequence.
- ◆ Pass the Praxis II: Specialty Area Counselor (School Guidance and Counseling, 20420) test with score of 630+ to be eligible for licensure.
- ◆ Be fingerprinted and pass an anti-discrimination test.
- ◆ After graduation and licensure, verify three years of one-half time or more

† Includes a 30-hour practicum.

counseling experience in Oregon public schools or in Oregon private schools accredited by the Northwest Association of Schools and of Colleges and Universities as a requirement for Continuing License as a school counselor. Students must complete a 9-credit Continuing School Counseling Licensure program within six years.

- ◆ Develop a professional portfolio as a school counselor with an Initial License as a condition for recommendation for the Continuing License as a school counselor. Students must document professional development as defined by Oregon Administrative Rules (OAR 584-070-0090).

Additional information about requirements and specific courses can be obtained from members of the Counselor Education faculty responsible for advising students in the school counseling specialization.

Special Education Licensure Programs

The PSU Graduate School of Education offers licensure and endorsement programs for:

- ◆ Persons seeking their special education endorsement who do not currently hold an Oregon teaching license.
- ◆ Persons seeking elementary education and special education endorsements through an integrated dual program who do not currently hold an Oregon teaching license.
- ◆ Persons seeking mid-level and/or secondary education and special education endorsements through an integrated dual program who do not currently hold an Oregon teaching license.
- ◆ Teachers who hold a valid Oregon teaching license in general education and wish to add the special education endorsement.
- ◆ Teachers who hold a valid Oregon teaching license in special education and wish to take advanced specialty coursework as part of their continuing professional development plan.
- ◆ Persons who wish to complete a Master of Arts (M.A.) or Master of Science (M.S.) degree in special education.

Dual endorsement options. The Special Education program offers a dual endorsement option in elementary education (general education licensure) and special education, referred to as the Inclusive Elementary Educators program. A second dual endorsement program is offered in mid-level high-school education and special education. A third dual endorsement program is offered in special education and vision impairments. These programs

include a dual student teaching experience. Students who complete these programs receive two endorsements. Information about these programs is available from the Graduate School of Education.

Positive Behavior Support Focus (PBS) Area. The PBS Focus Area provides additional training opportunities for students interested in working with students with challenging behavior. Students receive more intensive instruction and practice in the development and implementation of Behavior Support Plans for students with challenging behavior. Students will also have the opportunity to participate on school teams implementing school-wide systems to promote positive behavior in schools. The Focus Area is an additional option for full-time students completing a licensure courses, students in the PBS focus area complete three, 1-credit seminars on Positive Behavior Support and SpEd 510 Advanced Behavior Management.

Positive Behavior Support Focus (PBS) Area

- ◆ Three 1-credit seminars in fall, winter, spring terms
- ◆ SpEd 510 Advanced Behavior Management

Functional Communication Training Focus (FCT) Area. The FCT Focus Area provides additional training opportunities for students interested in working with students with significant disabilities in communication. Students received more intensive instruction and practice in Functional Analysis and Functional Communication Training (FCT). The Focus Area is an additional option for full-time or part-time students completing a licensure program in special education. In addition to their initial licensure courses, students in the FCT focus area complete three, 1-credit seminars on Functional Communication Training and options for completing their master's project.

Functional Communication Training (FCT) Focus Area

- ◆ Three 1-credit seminars in fall, winter, spring terms
- ◆ Opportunities for completion of master's project (SpEd 506)

Continuing licensure. The Oregon Teacher Standards and Practices Commission (TSPC) issues two licenses, the initial and the continuing. The Portland State University special education program offers programs at both levels. For information about the continuing license, please contact the Graduate School of Education (503-725-4619).

Special education common background required. In addition to a bachelor's degree, the following courses are prerequi-

sites for admission to the special education licensure programs. Experience in education such as: elementary, mid-level, or secondary teacher, instructional assistant, substitute teacher, or community program experience are strongly recommended. Applicants without experience are encouraged to enroll in UnSt 421 or SpEd 460 Outdoor Ed/Recreation for a two-week summer camp experience at Mt. Hood Kiwanis Camp with students with disabilities to determine if they wish to pursue a career serving populations with special needs.

	Credits
Psy 311 Human Development.....	3-4
Mth 211 Foundations of Elementary Mathematics	3-4
Ed 420/520 Intro to Education and Society.....	3-4
SpEd 418/518 Survey of Exceptional Learners	3
Highly recommended:	
SpEd 519 Principles of Special Education.....	3

For further information about the special education program, please call the Graduate School of Education for an information packet. You may also attend a general advising session in the special education office. Call the School for days and times of sessions (503-725-4619). Learn more about special education programs on the Web site www.ed.pdx.edu/sped/.

PSU offers state licensure and endorsements in the following areas:

- ◆ Special Educator: Elementary (Initial and Continuing License)
- ◆ Special Educator: Secondary (Initial and Continuing License)
- ◆ Visually Impaired Learner (Initial and Continuing License)
- ◆ Early Childhood/Early Intervention (Initial and Continuing License)

Special Educator Initial Endorsement Program—Elementary (Age 3-grade 8)

SpEd 536 Specialized Techniques.....	3
SpEd 509 Practicum: Functional Life Skills	3
SpEd 509 Practicum: Academic Skills.....	3
SpEd 519 Principles of Special Education.....	3
SpEd 520 Collaboration I: Families and Community—Elementary and Early Intervention ...	3
SpEd 526 Instructional Methods I: Literacy—Elementary.....	3
SpEd 527 Instructional Methods II: Math—Elementary.....	3
SpEd 522 Collaboration II: Inclusion Strategies ECE/Elementary.....	3
Ed 511 Reading/Language Arts Pre-K-12	3
SpEd 513 Classroom Assessment and Instructional Planning	3
SpEd 507 Student Teaching Seminar—Elementary	1
SpEd 532 Functional Assessment and Curriculum I	4
SpEd 534 Functional Assessment and Curriculum II	4
SpEd 512 Diagnostic Assessment	3
SpEd 521 Behavior Management in the Classroom	3
SpEd 525 Student Teaching—Elementary.....	12

Total 57

Special Educator Initial Endorsement Program—Middle Level/High School (Grade 5–Grade 12)

SpEd 536 Specialized Techniques.....	3
SpEd 509 Practicum: Functional Life Skills.....	3
SpEd 509 Practicum: Academic Skills.....	3
SpEd 519 Principles of Special Education.....	3
SpEd 523 Collaboration I: Work-Based Learning (Mid-level/High School).....	3
SpEd 528 Instructional Methods I: Literacy (Mid-level/High School).....	3
SpEd 529 Instructional Methods II: Math and Content Instruction: (Mid-level/High School).....	3
SpEd 524 Collaboration II: Schools and Inclusion Strategies (Mid-level/High School).....	3
SpEd 513 Classroom Assessment and Instructional Planning.....	3
SpEd 507 Student Teaching Seminar—Secondary.....	1
SpEd 532 Functional Assessment and Curriculum I.....	4
SpEd 534 Functional Assessment and Curriculum II.....	4
Ed 511 Reading/Language Arts K-12.....	3
SpEd 512 Diagnostic Assessment.....	3
SpEd 521 Behavior Management.....	3
SpEd 525 Student Teaching (Mid-level/High School).....	12
Total.....	57

Vision Impaired Learner Initial Endorsement Program

SpEd 507 Student Teaching Seminar.....	1
SpEd 509 STE I Visually Impaired.....	3
SpEd 509 STE II Visually Impaired.....	3
SpEd 519 Principles of Special Education.....	3
SpEd 520 Collaboration.....	3
SpEd 521 Behavior Management.....	3
SpEd 525 Student Teaching Visually Impaired.....	12
SpEd 540 Education of the Visually Impaired Learner.....	3
SpEd 541 Implications of Vision Problems of Children/Youth.....	3
SpEd 542 Assessment of Visually Impaired.....	3
SpEd 543 Reading and Literacy K-12 Visually Impaired Learner.....	3
SpEd 544 Academic Methods Visually Impaired Learners.....	3
SpEd 545 Orientation and Mobility/Life Skills.....	3
SpEd 546 Braille I.....	3
SpEd 547 Braille II.....	2
SpEd 575 Braille III/Technology for the Visually Impaired.....	3
SpEd 576 Visually Impaired Learner with Additional Disabilities.....	3
Total.....	57

Early Intervention/Early Childhood Special Education Endorsement Program

The Early Intervention and Early Childhood Special Education Program is designed to prepare professionals to provide services to infants, toddlers, and young children with special needs, and to their families. Representative positions include teaching special education preschool classes or kindergarten; supporting children with special needs in community preschool and daycare settings; providing consultation to Head Start, Early Head Start, and preschool providers; providing consultation and support to families; working with young children and their families in their home; providing assessment and evaluation services; and providing service coordination.

CI 570 Child Development and Education.....	3
CI 571 Play: Curriculum in Early Childhood Education.....	3
SpEd 509 Supervised Teaching Experience I.....	3
SpEd 509 Supervised Teaching Experience II.....	3
SpEd 510 Literacy: EI/SE.....	3
SpEd 518 Survey of Exceptional Learners.....	3
SpEd 520 Collaboration I.....	3
SpEd 525 Student Teaching.....	12
SpEd 507 Student Teaching Seminar.....	1
SpEd 580 Introduction to EI/ECSE.....	3
SpEd 581 Family Guided EI: 0-3.....	3
SpEd 582 Specialized Techniques: EI/SE.....	3
SpEd 583 Communication and Language Development.....	3
SpEd 584 Assessment: EI/SE.....	3
SpEd 585 Instructional Strategies I.....	3
SpEd 586 Instructional Strategies II.....	3
Total.....	55

Courses

Education

Courses with an asterisk (*) are not offered every year.

Ed 407 Seminar (Credit to be arranged.)

Ed 410 Experimental Course (Credit to be arranged.)

Ed 420/520

Introduction to Education and Society (4)

Explores the nature of public education in the social context of the United States. Purpose is to develop critical ways of thinking about schools as social institutions and as a means of cultural transmission and transformation. Includes one-credit (30 hour) assigned practicum in public school setting.

Ed 507 Seminar (Credit to be arranged.)

Ed 509 Practicum of Children/Youth (Credit to be arranged.)

Consent of instructor.

Ed 510 Experimental Course (Credit to be arranged.)

Ed 511 Reading/Language Arts Pre-K-12 (3)

Provides an overview of language development and general education literacy instruction from pre-kindergarten to 12th grade. Age-appropriate methods for literacy instruction at each grade level are discussed and evaluated with respect to the exceptional learner. Prerequisites: Psy 311, Ed 520.

Ed 525 Student Teaching (6-15)

Ed 620 Doctoral Studies Proseminar (1-4)

This three course four-credit sequence is required for all doctoral students and is taken during the first year of doctoral study, beginning with two credits in the fall and one credit each in winter and spring terms. The course is designed to extend and deepen thinking about education, "educational leadership" and inquiry through shared readings, interaction with facul-

ty and local educational leaders, and critical reflective writing and conversation. Students are expected to initiate and maintain a learning and a professional portfolio and by the end of spring term to develop and present a formal paper that examines an educational issue using frameworks and concepts from Ed 630, 640 and 650, which are also taken during their first year. This paper may serve as an initial draft of the doctoral core examination paper.

Prerequisite: admission to doctoral program or permission of instructor.

Ed 630 Principles and Practices of Learning (4)

The study of theories of learning in a variety of educational contexts: classrooms, counseling, and non-school settings. Study of the narratives of teaching and learning to analyze the enactment of theory and to examine the variety of ways to research learning. Prerequisite: admission to doctoral program or permission of instructor.

Ed 640 Organizational Leadership Theory and Research in Education (4)

Organizational and leadership theory and research in education informing the study, practice, and improvement of educational policy and practice in school and non-school contexts; emphasis on emergent perspectives and their significance for theory, research, and practice. Prerequisite: admission to doctoral program or permission of instructor.

Ed 650 Educational Policy and Politics (4)

The study of how policy is proposed, adopted, implemented, and changed in educational organizations. Special emphasis on the political process and how it influences the policy cycle. Prerequisite: admission to doctoral program or permission of instructor.

Ed 660 Foundations of Research Paradigms and Methods (4)

An introduction to research paradigms and research methodologies that are useful to better understand and/or address problems of educational practice. Provides doctoral students with knowledge of basic processes of inquiry so they are able to begin designing individual research projects. Prerequisite: admission to doctoral program and/or EPFA 511 or 515 or permission of instructor.

Ed 661 Qualitative Research Methods in Education (4)

Introduces qualitative research methods of data collection and analysis in education. Reviews theoretical foundations, field research problems, and qualitative data collection and analysis methods including participant observation, depth interviewing, and development of grounded theory. Prerequisite: admission to doctoral program or permission of instructor.

Ed 662 Quantitative Research Methods in Education (4)

Introduces quantitative research methods of data collection and analysis in education. Reviews theoretical foundations, applications

and design issues of methods such as survey, correlational and experimental research. Also, introduces how to conduct a statistical data analysis and use such methods as correlation, t-test, analysis of variance and chi-square. Prerequisite: admission to doctoral program or permission of instructor.

Ed 700
In-service Education (Credit to be arranged.)

Credits are for district in-service and are not counted toward a graduate degree or specialist license.

Curriculum and Instruction

CI 199
Special Studies (Credit to be arranged.)

CI 251
Introduction to Early Childhood Education (3)

This course will provide an overview of the early childhood education profession, including issues, research, historical influences, programs for young children, and career options. Field experience required.

CI 252
Instruction and Management in Preschool Education (3)

Growth and development characteristics of preschool children (ages 3-5) for planning educational programs, curriculum, instruction, scheduling, and environment, management, and parent communication. Field experience required. Recommended prerequisite: CI 251 or coursework in human growth and development.

CI 253
Preschool Programming (3)

This course will provide experience and guidance in planning, implementing and evaluating developmentally appropriate teaching and learning experiences in preschool settings. Field experience required. Recommended prerequisite: CI 252.

CI 350
Aesthetics and Physical Education for Young Children (4)

This course will provide preparation for planning, implementing, and evaluating developmentally appropriate integrated teaching and learning experiences in art, music, movement, drama, and physical education for young learners, ages 4-8 years. Recommended prerequisites: admission to teacher education; CI 251.

CI 351
Science, Social Studies and Health for Young Children (5)

This course will provide preparation for planning, implementing, and evaluating developmentally appropriate integrated teaching and learning experiences in science, social studies, and health for young learners, ages 4-8 years. Recommended prerequisites: admission to teacher education; CI 251.

CI 401/501
Research (Credit to be arranged.)
Consent of instructor.

CI 402/502
Independent Study (Credit to be arranged.)

CI 403/503
Thesis (Credit to be arranged.)

CI 404/504
Cooperative Education/Internship (Credit to be arranged.)

CI 405/505
Reading and Conference (Credit to be arranged.)

Consent of instructor.

CI 406/506
Special Problems (Credit to be arranged.)

CI 407/507
Seminar (Credit to be arranged.)

CI 408/508
Workshop (Credit to be arranged.)

CI 409/509
Practicum (Credit to be arranged.)

Consent of instructor.

CI 410/510
Experimental Course (Credit to be arranged.)

CI 432/532
Computer Applications for the Classroom (3)

This course is designed for preservice or inservice teachers who wish to become comfortable with the use of the computer to enhance classroom teaching and learning. Topics include an introduction to computers and technology in education; review and curriculum integration of courseware; use of word processing; designing and using computer-based databases in the classroom; computer literacy; and graphics software for the classroom.

CI 433/533
Computer Applications in Instruction (3)

A comprehensive survey of the use of microcomputers in instruction. Terminology, educational applications, ethical issues, courseware, evaluation and selection, multimedia applications, management tools for educators, planning and organizing for school computer use, hardware selection, computer literacy and technological literacy, and network resources for teachers. Hands-on use of the computer to review courseware is an important part of the course. Recommended prerequisite: CI 432 or equivalent.

CI 434/534
Microcomputer-based Management and Research Tools for Educators (3)

This course introduces educators to important and useful tools for classroom, personal, and professional use: word processing, database, spreadsheet, survey, and statistical applications. Each class session includes demonstration and hands-on use of microcomputers. Each student will develop a word-processed document, a database, a spreadsheet application, a survey, and a statistical document. Recommended prerequisite: CI 432 or equivalent.

CI 443/543
Effective Teaching Strategies and Materials for Working With Linguistically and Culturally Diverse Students (3)

What strategies and materials work in teaching children who are learning English? Become acquainted with the current research on identification, development, and practice of develop-

mentally and linguistically appropriate strategies and materials to effectively engage English Language Learners (ELL) at all grade levels in the learning process. Special attention will be given to students' bilingual/bicultural characteristics as important aspects of developing successful curriculum.

CI 458/558
Advanced Curriculum Design in Kindergarten/ Primary Grades (3)

This course will consider growth and development characteristics of children ages 5-8 years and research on teaching for planning educational programs, curricula, instruction, environment, management, and guidance.

CI 472†/572
Language and Literacy in Early Childhood Education (3)

Helps teachers understand, assess, and promote early experiences with language that contribute to the process of becoming literate. Recommended prerequisite: Undergraduate early childhood education coursework or teaching experience with young children.

CI 474/574
Assessing and Instructing Learners with Literacy Problems (4)

Focuses on working, particularly in the regular classroom, with students experiencing difficulties in learning to read and write. Deals with: theoretically-based understanding and analysis (such as miscue analysis) of students' reading and writing; developing students' reading and writing knowledge and strategies; social and psychological aspects of literacy problems. A field experience, usually a case study, is included.

CI 475†/575
Supervision in Early Childhood Education Settings (3)

Integrates theory and research of adult and professional development with supervisory models and practices appropriate for early childhood education settings. Recommended prerequisite: Undergraduate early childhood education coursework or teaching experience with young children.

CI 491/591
Enriching Children's Reading (3)

A study of the enrichment of children's reading through literature. An advanced course designed for parents and teachers of nursery, kindergarten, and elementary school children. Recommended prerequisite: Lib 428/528.

CI 511
Classroom Management (1-3)

Principles and practices of K-12 classroom management and discipline. Topics include organization and logistics of classroom procedures, communication and routine building, procedures for prevention and resolution of disruptions, problem solving, decision making, and multicultural and urban perspectives. Prerequisite: admission to the teacher education program.

CI 512
Teaching and Learning (1-3)

Principles of human learning and related practices for classroom teaching. The psychology of learning in a school setting includes both individual and group generalizations. The roles and

† Restricted to students in the Child and Family Studies degree program.

functions of a classroom teacher as a facilitator of learning, and a decision maker concerning pupil needs and achievement. Prerequisites: admission to the teacher education program; Psy 204 or 205, Psy 311.

CI 513
Classroom Instruction and Technology (2-5)

Principles and skills for organization and presentation of K-12 classroom instruction. Topics included are: student needs analysis, planning, direct and indirect instructional techniques, use of aides, assessment of pupil achievement, and evaluation of teaching. Includes mediated instruction and preparation and use of instructional materials. Prerequisite: admission to the teacher education program.

CI 514
Multicultural and Urban Education (1-3)

Principles, practices, promises, and problems of multicultural education, with emphasis in urban settings. Use of student and community diversity to enhance subject matter, learning, and classroom life. Characteristics, opportunities, and needs of students in city schools presented with examples of current effective practice. Political and sociological influences in U.S. educational system, especially urban school settings. Prerequisite: admission to the teacher education program.

CI 515
The Reflective Practitioner (1-3)

Perspectives and techniques for formal and informal analysis, information gathering, decision making, value judgments about educational practice. Prerequisite: admission to the teacher education program.

CI 516
Integrated Methods I (1-5)

An integrated approach to literacy development. Deals with processes of becoming literate, the content of instruction in the language arts, and methods for implementing an integrated curriculum. Includes field assignments in school settings. Prerequisites: admission to the teacher education program; Lib 490/590 or equivalent.

CI 517
Integrated Methods II (1-5)

Students explore trends, practices, materials, and resources for teaching health, science, and social science in the elementary classroom. Includes content-specific methods and materials as well as those appropriate to an integrated elementary curriculum. Field experience required. Prerequisites: admission to the teacher education program, CI 512.

CI 518
Integrated Methods III (1-5)

Trends, practices, materials, and resources for teaching art, music, mathematics, and physical education in the elementary school. Includes content-specific methods and materials as well as those appropriate to an integrated elementary curriculum. Field experience required. Prerequisites: admission to the teacher education program; CI 512.

CI 519
Special Secondary Methods (3)

Problems and methods in selecting and organizing materials for instruction: comparison and

evaluation of methods, laboratory techniques, supplies, equipment, or economy of time and materials. Prerequisite: admission to the teacher education program.

CI 520
Linguistics for Teachers (3)

What should classroom teachers know about language and how it works? This course will give teachers background knowledge about the sounds, grammar, meaning system, and social context of language and the implications these have for classroom practice in reading, writing, and speaking. Addresses topics such as invented spelling, the role of phonics in reading, the teaching of grammar, and Black English and other linguistic variations.

CI 521
Reading and Composition in the Content Areas (3)

Course designed to help educators guide their students in acquiring skills needed for adequate reading, thinking, writing, and study in content areas. Emphasis on the functional teaching of reading and writing—the design and preparation of materials to use with textbooks in all school subjects. Prerequisite: admission to the teacher education program.

CI 522
Literacy Foundations (4)

Focuses on the foundational areas of psychology, history, theory, and research, and familiarizes teachers and reading specialists with varied ideas about how reading and writing work and how they are learned, through the examination of major theorists and researchers, both present and past.

CI 523
Language Arts in Middle Schools (4)

Designed for teachers at the middle school level. Explores the nature of teaching young adolescents, including developmental psychology and methods of literacy education with a corresponding field experience. Includes ways of studying language through literature and the arts, using writing and speaking to study language, language use in different academic settings and content areas, and emerging trends for studying language in the 21st century.

CI 524
Writing Workshop (3)

Primary focus is on establishing writing workshops in the elementary/secondary classrooms. Approach guides educators through all phases of establishing a writing workshop atmosphere. Inclusion of state writing standards and peer editing procedures as well as integrating writing across the curriculum are included.

CI 525
Issues and Perspectives in the Teaching of Reading (3)

An examination of the development of current practices in the teaching of reading. The identification of major trends and issues and a critical review of relevant past and present research. Prerequisite: completion of student teaching.

CI 526
Reading for the Creative and Gifted (3)

A study of the unique reading characteristics of the creative and gifted and an overview of psy-

chological and philosophical understandings important for the teacher teaching reading to these able students. Prerequisite: Lib 428/528.

CI 527
Enriching Reading in Secondary Schools (3)

A study of adolescent psychology and development in relation to reading, and the role of the teacher as a resource. In-depth investigation of approaches to literature and reading as an act and introduction to humanistic objectives, creativity, and value clarification through reading. Prerequisite: Lib 429/529.

CI 528
Whole Language Approach to Literacy (3)

Designed to give the rationale and theory base for the whole language approach to literacy and to examine appropriate classroom practices and materials for grades K-8.

CI 529
School Reading Program Leadership (3)

The course is for current or future administrators, coordinators, curriculum consultants, or teachers whose responsibilities will include leadership roles in the administration of school-wide or district-wide reading programs. It deals with long- and short-term objectives, school organizational patterns, staff competencies, materials selection, program evaluation, needs assessment, and the use of community resources. Prerequisite: CI 474/574 or equivalent.

CI 536
Language, Literacy, and Culture (3)

Understanding the central importance of language as it functions within educational contexts. Implications of social, cultural, and linguistic diversity on teaching and learning.

CI 545
Educating Early Adolescents (3)

Focuses on the nature of early adolescence and examines theory and practice informing development of the philosophy of early adolescent education, organizational structures appropriate for these learners, and the diverse roles of the middle-level teacher. Introduces students to the curriculum and delivery methods appropriate for emerging adolescents.

CI 547
Advanced Methods-Special Subject Fields in the Elementary School (4)

Concentrated study of recent trends and recurring problems in selecting, organizing, evaluating, and presenting concepts, information, and materials of instruction in subjects taught in elementary school: art, health, language arts, mathematics, music, physical education, reading (includes one additional field work credit), science, social studies.

CI 548
Advanced Methods-Special Subject Fields in the Secondary School (3)

Concentrated study of recent trends in the curriculum and methodology of the subject area. Investigates the problems and methods in selecting and organizing materials for instruction, including integration of media, computers, and technology. Separate courses in art, business education, English, health, mathematics, modern foreign languages, music, physical

education, reading and composition, science, social science, speech, theater arts.

CI 550

Student Teaching I, Early Childhood (6)

Observation and some teaching under direction of supervising classroom teacher and University supervisor in conjunction with assignments related to methods coursework and diagnosis of individual needs. Prerequisite: admission to the teacher education program.

CI 551

Student Teaching II, Early Childhood (15)

Observation and teaching under direction of classroom teacher and University supervisor. Direct responsibility for learning activities, developing skills in techniques of teaching and classroom management; related professional activities. Weekly seminar. Prerequisite: admission to the teacher education program.

CI 552

Student Teaching I, Elementary (6)

Observation and some teaching under direction of supervising classroom teacher and University supervisor in conjunction with assignments related to methods coursework and diagnosis of individual needs. Prerequisite: admission to the teacher education program.

CI 553

Student Teaching II, Elementary (15)

Observation and teaching under direction of classroom teacher and University supervisor. Direct responsibility for learning activities, developing skills in techniques of teaching and classroom management; related professional activities. Weekly seminar. Prerequisite: admission to the teacher education program.

CI 554

Student Teaching I, High School (6)

Observation and some teaching under direction of supervising classroom teacher and University supervisor in conjunction with assignments related to methods and classroom management coursework and diagnosis of individual needs. Prerequisite: admission to the teacher education program.

CI 555

Student Teaching II, High School (15)

Observation and teaching under the direction of classroom teacher and University supervisor. Direct responsibility for learning activities, developing skills in teaching and classroom management; related professional activities. Weekly seminar. Prerequisite: admission to the teacher education program.

CI 556

Mid-Level Student Teaching I (6)

Observation and teaching in a middle or junior high school setting under direction of supervising classroom teacher and university supervisor in conjunction with assignments related to methods coursework and diagnosis of individual needs. Prerequisites: admission to teacher education program; at least 14 credits in residence; cum. 3.00 GPA; 3.00 GPA in professional courses. Admission by approved application to student teaching.

CI 557

Mid-Level Student Teaching II (15)

Observation and full-time teaching in a middle or junior high school setting under direction of supervising classroom teacher and university supervisor. Direct responsibility for learning activities developing skills in techniques of teaching and classroom management; related professional activities. Attend regularly scheduled seminar. Prerequisites: admission to teacher education program; successful completion of Student Teaching I; all appropriate GTEP methods courses; 3.00 GPA in professional courses. Admission by approved application two academic terms in advance.

CI 560

Action Research (3)

Designed to help educators see themselves as researchers, in order that they may conduct research in educational settings that contribute to the improvement of education. Research questions and methods appropriate for practicing educators will be covered.

CI 561, 562

Advanced Educational Psychology (3, 3)

Review and development of modern viewpoints in educational psychology with particular attention to theories of learning and their application to school and educational problems; an examination of experimental material that seems most useful and relevant to educational psychology.

CI 563

Teacher as Researcher (4)

This course is intended to promote the philosophical approach and the skills necessary for novice teachers to become effective researchers in their own classrooms. Teachers will improve their ability to expand their practice through systematic study. This involves, for example, the development and use of teacher networks, the skills necessary to locate, evaluate and use current educational research, and the involvement of K-12 students in studying their own classrooms. Includes an introduction to action research as a tool for instructional improvement and professional development. Teacher work samples provide a basis for expanded inquiry and instructional planning.

CI 565/665

Theoretical Models of Curriculum (3)

Study of the history of curriculum and curriculum theory in the United States. Emphasis is placed on the historical, philosophical, and scientific foundations of curriculum theory. A main goal of the course is to provide a framework for evaluation, selection, and development of school curricula.

CI 566

Curriculum Construction (3)

Evaluation of current curricular programs and trends. Techniques and methods of curricular improvement. Leadership in curricular improvement. Preparation of a curriculum.

CI 567

Curriculum and Culture (3)

Understanding the cultural basis of instructional materials in curriculum development and teaching and how the organization of knowledge in a

subject area and the explanation of new ideas are influenced by cultural root metaphors. Planning and administering the instructional materials center in the modern school. The cooperative roles of the teacher, administrator, and librarian in curricular development and materials.

CI 568

The Curriculum of the Public School (3)

Overview of the public school curriculum with emphasis on the various subject fields; organization of the school for curriculum development; education objectives; the course of study; evaluation of the public school curriculum.

CI 570

Child Development and Education (3)

In-depth study of child development theory, principles, current research, practice of observational strategies, and application of growth and development data to educational programs for young children. Study will extend to decision making and developmentally appropriate practice in early childhood education.

Prerequisite: Undergraduate early childhood education coursework or teaching experience with young children.

CI 571

Play: Curriculum in Early Childhood Education (3)

Study of stages of play, theory, research on play, cultural differences in play, and adult role in facilitation of play. Curriculum will be reviewed, developed, and integrated with a focus on play for teaching and learning, for child-centered approaches, and for meeting needs of special learners. Prerequisite: Undergraduate early childhood education coursework or teaching experience with young children.

CI 573

Assessment in Early Childhood Education (3)

Study of and experience with a range of developmentally appropriate assessment strategies for use in diagnostic, formative, and summative evaluation of growth and development of young children and for appropriate educational decisions in early childhood education settings. Prerequisite: Undergraduate early childhood education coursework or teaching experience with young children.

CI 580

Theories of Instruction (3)

An investigation of what happens in the classroom, emphasizing the interrelatedness of learning, subject matter, and teaching; testing of scholars' and the student's own ideas against concrete case studies of instruction; formulation and defense of one's own theory. Prerequisite: teaching experience or consent of instructor.

CI 581/681

Issues in Education (3)

An introduction to the study of contemporary issues which impact teaching and learning environments for K-12 students and their teachers. This course is a graduate seminar in which students will identify critical issues in contemporary education and analyze those issues from a variety of perspectives.

CI 601
Research (Credit to be arranged.)

CI 602
Independent Study (Credit to be arranged.)

CI 603
Dissertation (Credit to be arranged.)

CI 604
Cooperative Education/Internship (Credit to be arranged.)

CI 605
Reading and Conference (Credit to be arranged.)

CI 606
Special Problems/Projects (Credit to be arranged.)

CI 607
Seminar (Credit to be arranged.)

CI 608
Workshop (Credit to be arranged.)

CI 609
Practicum (Credit to be arranged.)

CI 610
Selected Topics (Credit to be arranged.)

CI 801
Research (Credit to be arranged.)

CI 802
Independent Study (Credit to be arranged.)

CI 804
Cooperative Education/Internship (Credit to be arranged.)

CI 805
Reading and Conference (Credit to be arranged.)

CI 806
Special Problems (Credit to be arranged.)

CI 807
Seminar (Credit to be arranged.)

CI 808
Workshop (Credit to be arranged.)

CI 809
Practicum (Credit to be arranged.)

CI 810
Experimental Course (Credit to be arranged.)

READING

Read 509

Practicum: ReadOregon (3)

The practicum is carried out in schools and/or districts and consists of reading endorsement candidates working directly with students, other faculty, administrators, and the school community to fulfill various roles of the reading specialist. Among the roles to be demonstrated during the practicum are: (1) teaching reading; (2) literacy testing; (3) developing curriculum for various groups of readers including ELL, struggling readers, average and/or gifted readers; (4) assessing and making recommendations for a school's reading program; and (5) developing literacy-focused professional development sessions for faculty, administrators, instructional assistances, and parents. Prerequisite: The practicum may not be taken until a candidate has completed a minimum of 12 credit hours of coursework in literacy. Typically, the practicum is the final capstone course of the reading endorsement course of study.

Read 519

Language Study for Teachers, K-12 (1)

This course will provide foundational knowledge in linguistics important for literacy teachers. Topics include fundamentals in: phonetics and phonology; morphology; syntax; semantics; pragmatics and language use in society; and classroom discourse.

Read 530

Reading and Composition in the Content Areas (3)

Designed for preservice and inservice teachers to explore literacy strategies in order to guide their students in acquiring skills needed for adequate reading, writing, and study in content areas. Emphasis is on the functional teaching of reading and writing including designing and preparing materials to use with curriculum materials in all school subjects. Designed also to help educators identify and design materials to promote and develop Oregon's Standard and Benchmark literacy abilities in their students.

Read 532

Writing in the Content Areas (1)

Learners will explore instructional strategies in order to guide their students in acquiring writing skills in content areas. Emphasis is on the functional teaching of writing including designing and preparing curriculum materials to use across the content areas.

Read 540

Media Literacy: K-12 (1)

This course is concerned with helping K-12 teachers develop an informed and critical understanding of the nature of mass media, so that they can teach children how to build connections between their learning in the classroom and their use of media outside of school. Participants will develop abilities to access, analyze, evaluate, and communicate information in a variety of formats.

Read 551

Literacy Instruction for Special Needs Students K-12 (3)

Designed to prepare effective and reflective teachers in language and literacy instruction for students with special needs. Participants will explore multiple perspectives, practices, and methodological approaches to literacy instruction which are research-based, and proven effective to promote literacy development.

Topics include (but are not limited to): (1) language and literacy development; (2) characteristics of special needs students; (3) framework of effective literacy instruction within context of students with special needs; (4) methods of effective basic literacy skills instruction; (5) methods of teaching comprehension and critical thinking strategies; (6) methods of promoting learning and meta-cognitive strategies for lifelong learning, and (7) methods of appropriate and meaningful assessment.

Read 554

Literacy Instruction Strategies with ELL Students, K-12 (3)

This course focuses on research-based effective literacy instruction frameworks and strategies for working with English language learners. Emphasis is placed on frameworks and strategies that promote ELLs academic and English

literacy development in an authentic and culturally responsive environment.

Read 555

ELL Writing Strategies for Upper-Elementary and Middle School Students (1)

This course will provide hands-on experiences of research-proven strategies in ELL writing instruction for upper- and middle-school students. Topics include: first and second language writing development; instructional principles of teaching writing to upper-elementary and middle-school ELL students; special issues with upper-elementary and middle-school students in writing development and instruction; setting up effective, student-centered organization and systematic writing instruction with ELL students; strategies to provide appropriate writing instruction based on ELL students' language development stages; and fundamental strategies in ELL writing assessment.

LIBRARY

Lib 181

Use of the Library (3)

Initial training in the effective use of the University library and resources, such as the card catalog, reference materials, and electronic resources, including the on-line datalog, CD-ROM databases, and Internet.

Lib 401/501

Research (Credit to be arranged.)

Lib 402/502

Independent Study (Credit to be arranged.)

Lib 403/503

Thesis (Credit to be arranged.)

Lib 404/504

Cooperative Education/Internship (Credit to be arranged.)

Lib 405/505

Reading and Conference (Credit to be arranged.)

Lib 406/506

Special Problems (Credit to be arranged.)

Lib 407/507

Seminar (Credit to be arranged.)

Lib 408/508

Workshop (Credit to be arranged.)

Lib 409/509

Practicum (Credit to be arranged.)

Lib 410/510

Experimental Course (Credit to be arranged.)

Lib 428/528

Children's Literature, K-5 (3)

Materials grades K-5. Traditional genres such as picture books, traditional tales, modern realism, romance, adventure, mystery, historical fiction, science fiction, fantasy, biography, poetry, and nonfiction. Study of literature that illustrates cultural diversity. Resources for selection; awards and honors. Prerequisite: junior standing.

Lib 429/529

Young Adult Literature (3)

A survey of books and nonbook materials suitable for students of junior and senior high school age. Emphasis on selection and evaluation of books, adolescent reading interests, and reading guidance for curricular and personal needs.

Lib 432/532**Multicultural Literature K-12 (3)**

An introduction to contemporary multicultural literature, fiction and nonfiction, for use with early childhood, elementary, middle school and high school students. Emphasis is on the selection, evaluation, and utilization of literature in the classroom and library media center.

Lib 433/533**Global Literature: K-12 (3)**

A survey of global literature for use with students in elementary, middle, or high school classrooms. A major focus will be on selecting reading materials and using them in the library and classroom.

Lib 530**Literature Promotion Programs, K-12 (3)**

A study of techniques for promoting literature in elementary and secondary schools: author/illustrator studies, reading books aloud, storytelling, booktalks, reading promotion programs, and incorporating literature throughout the curriculum. Prerequisite: Lib 428/528.

Lib 534**Administration of the School Library Media Center (3)**

Study of the school library media center and its integral role in the instructional program of the school. The school library media movement. Focus on the leadership role of the media specialist; management of personnel; media program budgeting; facility planning; role of state and national standards in planning, evaluation, and development; other administrative areas. Field activities included. Prerequisite: Lib 428/528.

Lib 536**Design and Production of Instructional Media (3)**

Study of the use of instructional media, K-12. Instructional design; criteria for quality print and nonprint media. Production of instructional media including slide/tape presentations, video recordings, and advanced techniques for overhead transparencies; graphic techniques; and uses of computers and technology in production. Effective use of instructional equipment and technology. Research of education technology and communication. Prerequisite: Lib 425 or CI 432/532.

Lib 541**Reference and Information Systems and Services (4)**

An analysis of reference services and procedures. Study of print, nonprint, and electronic database reference sources to include bibliographic tools, indexes, encyclopedias, ready references, biographical tools, geographical tools, dictionaries, government documents, and specialized materials. Research in reference services and technological delivery systems. Prerequisite: Lib 428/528.

Lib 542**Collection Development and Evaluation (3)**

Principles and practice of evaluation, selection, and acquisition of all types of materials included in a library media center collection. Selection and collection development policies and procedures. Study of professional evalua-

tion and selection sources. Field activities included. Prerequisite: Lib 428/528.

Lib 547**Library Media Instructional Programs, K-12 (3)**

A study of the K-12 information skills program, including the development of a scope and sequence, effective teaching strategies, specific skills instruction, correlation and integration with the classroom curriculum, and organization and development of a teaching program in the library media center. Prerequisite: Lib 428/528.

Lib 548**Organization of Library Media Collections (4)**

Principles of organization of library media center collections. Basic cataloging procedures for print, nonprint, and electronic forms of media using standard cataloging and classification codes. Application of online cataloging databases. Prerequisite: Lib 428/528.

Lib 554**Student Teaching I (4)**

Beginning student teaching in a library media center under the direction of a supervising library media teacher and university supervisor. Observation and participation in teaching, administrative and other responsibilities of a library media specialist. Opportunities for involvement in student learning activities, development of teaching skills, basic skills in management and discipline of students. Taken in conjunction with Lib 547 and Lib 534. Prerequisites: admission to the program and approved application.

Lib 555**Student Teaching II (15)**

Ten weeks of full-time student teaching in a school library media center under the supervision of a library media teacher and university supervisor. Participation in a full range of teaching, administrative, and other responsibilities of a library media specialist. Direct responsibilities for student learning activities, development of teaching skills, creating a climate conducive for learning; management and discipline of students, and related professional activities. Weekly seminar. Prerequisites: admission to program and approved application.

Lib 561**Practicum Elementary Library Media Center (3)**

A planned experience consisting of practical application of the full range of roles and responsibilities of the library media specialist in an elementary library media center under the direction of a supervising elementary school library media teacher and a University supervisor. Prerequisite: admission to Educational Media Endorsement Program.

Lib 562**Practicum Middle or Junior High Library Media Center (3)**

A planned experience consisting of practical application of the full range of roles and responsibilities of the library media specialist in a middle or junior high school library media center under the direction of a supervising middle or junior high school library media

teacher and a University supervisor.

Prerequisite: admission to Educational Media Endorsement Program.

Lib 563**Practicum High School Library Media Center (3)**

A planned experience consisting of practical application of the full range of roles and responsibilities of the library media specialist in a high school library media center under the direction of a supervising high school library media teacher and a University supervisor. Prerequisite: admission to Educational Media Endorsement Program.

Lib 573**Advanced Methods and Procedures in School Library/Media Centers (3)**

A study of the school library/media center as a teaching agency. Designed to focus on the teaching role of the school librarian/media specialist in presenting concepts, principles, content, and techniques to students and teachers. Emphasis placed on instruction in library and research skills; reading, viewing and listening guidance; in-service for school personnel; and problems involved in performing effectively as a teacher. Observation of library/media centers required. Prerequisite: Educational Media Endorsement or consent of instructor.

Lib 574**Research Strategies for Library Media Specialists (3)**

Advanced reference materials available in school and academic libraries, including computer databases and network resources. Prerequisite: Educational Media Endorsement or consent of instructor.

Lib 575**Directed Field Experience (3)**

Planned contact for school library media specialists with professional librarians and/or media specialists in public, academic, special libraries, information centers, and other library or media-related settings. Directed field work and visitations to various libraries and information centers will be the emphasis of the course. Seminar meetings on campus deal with topics related to the field experience as well as intensive study of related advanced issues such as automation, personnel, and management. Prerequisite: Educational Media Endorsement or consent of instructor.

Lib 576**Planning and Evaluation of Library Media Programs (3)**

Analysis of media center programs and planning techniques; study and application of media center evaluation instruments; analysis and development of library media center programs. Prerequisites: Basic Educational Media Endorsement or consent of instructor. Prerequisite: Educational Media Endorsement or consent of instructor.

Lib 587**Video Production (3)**

Study and practice of video recording techniques including storytelling, various camera techniques, and editing. Students will spend time planning, producing, shooting, editing,

and presenting video productions. Prerequisite: Lib 536 or consent of instructor.

Lib 588**Computers and Advanced Technology in the Library Media Center (3)**

An analysis and study of the role of computers and advanced technology in the library media center and classroom. Administrative uses as well as curriculum development will be studied for the technology. Prerequisite: Lib 536 or consent of instructor.

Lib 589**Creative Photography in Education (3)**

A study of photographic processes to include photography without a camera, basic animation techniques, and darkroom techniques. Analysis of completed photographs in terms of composition, style, and technique will also be studied. All techniques will be related to classroom instruction in the elementary and secondary schools. Prerequisite: Lib 536 or consent of instructor.

Lib 592**Contemporary Children's and Young Adult Literature (3)**

An analysis and study of contemporary children's and young adult literature. A study of trends and styles in modern literature. Includes picture books, fiction, and nonfiction. Contemporary authors and illustrators featured. Prerequisite: Lib 428/528 or equivalent.

Lib 601**Research (Credit to be arranged.)****Lib 602****Independent Study (Credit to be arranged.)****Lib 603****Dissertation (Credit to be arranged.)****Lib 604****Cooperative Education/Internship (Credit to be arranged.)****Lib 605****Reading and Conference (Credit to be arranged.)****Lib 606****Special Problems (Credit to be arranged.)****Lib 607****Seminar (Credit to be arranged.)****Lib 608****Workshop (Credit to be arranged.)****Lib 609****Practicum (Credit to be arranged.)****Lib 610****Selected Topics (Credit to be arranged.)****Lib 801****Research (Credit to be arranged.)****Lib 802****Independent Study (Credit to be arranged.)****Lib 804****Cooperative Education/Internship (Credit to be arranged.)****Lib 805****Reading and Conference (Credit to be arranged.)****Lib 806****Special Problems (Credit to be arranged.)****Lib 807****Seminar (Credit to be arranged.)****Lib 808****Workshop (Credit to be arranged.)****Lib 809****Practicum (Credit to be arranged.)****Lib 810****Experimental Course (Credit to be arranged.)**

Educational Policy, Foundations, and Administrative Studies

EPFA 401/501**Research (Credit to be arranged.)****EPFA 402/502****Independent Study (Credit to be arranged.)****EPFA 403/503****Thesis (Credit to be arranged.)****EPFA 404/504****Cooperative Education/Internship (Credit to be arranged.)****EPFA 405/505****Reading and Conference (Credit to be arranged.)****EPFA 406/506****Special Problems (Credit to be arranged.)****EPFA 407/507****Seminar (Credit to be arranged.)****EPFA 408/508****Workshop (Credit to be arranged.)****EPFA 409/509****Practicum (Credit to be arranged.)****EPFA 410/510****Experimental Course (Credit to be arranged.)****EPFA 418/518****Educational Leadership in Public Schools (4)**

Familiarizes students with the theoretical development, empirical studies, policies, and decision-making processes of public schooling. Structured around a number of themes, including instructional leadership, moral leadership, democratic leadership, facilitative leadership, curricular leadership, constructivist leadership, and ethical leadership in education. Students explore the operational meaning of these perspectives through a combination of experiences including class discussions, case studies, guest speakers, and interviews and observations of school leaders at work.

EPFA 429/529**Principles of Training and Development (3)**

Examination of the principles of training and development with emphasis on applying adult learning theory to the training function. Essential principles include those related to developing training objectives, selecting training methods and resources, sequencing the learning experiences, and evaluating the training. Designed for trainers from a variety of work settings with a strong background in a content area who have little background in adult learning theory and its application to training and development practices.

EPFA 430/530**Course Design and Evaluation (4)**

Examination of the field of instructional program design for adult learners within the training and development field, in educational and non-educational organizational settings. Focus on learning to design and manage instructional

activities in response to training needs and skills analyses. Students are required to select and use an appropriate design model, design a preliminary needs assessment, develop program goals and learning objectives, develop an instructional plan, develop a plan to assess student learning and evaluate the program, and critically review the design document. Major emphasis given to developing the instructional design document that demonstrates a student's ability to align and integrate effectively all aspects of the design process and to incorporate adult learning theory. Recommended prerequisite: EPFA 429/529.

EPFA 431/531**Contemporary Issues in Training and Development (3)**

Building on competencies developed during previous courses in the training and development series, provides a culminating experience to the series. Provides an opportunity for students to examine national and local trends in training and organizational development and to prepare for ongoing professional growth in the context of contemporary issues in the field. Recommended prerequisite: EPFA 429/529 plus two other courses in the series.

EPFA 432/532**Training Methods (3)**

Focuses on instructional strategies and effective delivery of training programs necessary for enhancing adult learning and professional development. Students will examine individual learning preferences and multiple types of active pedagogy for increasing transfer of learning. In addition, various techniques and tools for linking learning outcomes with organizational goals will be addressed. Prerequisites: EPFA 429/529.

EPFA 434/534**Leadership of the Training Function (3)**

Focuses upon research-based, practical approaches for leading, managing, and evaluating the training and development function in organizations. It explores the role of training and development in achieving individual and organizational goals, as well as strategies and resources used in effective personnel development. Students analyze how to: develop, manage and evaluate the training function; identify strategies and resources for effective training management; and diagnose how the organization's culture and needs affect the selection and success of training management efforts. Prerequisite: EPFA 429/529.

EPFA 435/535**Organization Transformation through Training and Development (3)**

Designed for managers of the training and development function in organizations, this course focuses on the role of training and development in organization transformation, improvement, and change. The course provides opportunities to bring real workplace examples into the classroom and to apply organization development and systems theory in the development strategies for organization improvement through the training and development function. Prerequisite: EPFA 429/529.

EPFA 446†/556**Early Childhood Education: Relationships With Home and Society (3)**

Considers the sociology of families and communities in the development of cooperative relationships with programs for young children. Prerequisite: Undergraduate early childhood education coursework or teaching experience with young children.

EPFA 447/547**Administration of Early Childhood Programs (3)**

Examines theory and practice informing the administration/leadership of early childhood programs to include: 1) organizational configurations, 2) leadership and the dynamics of the work group, 3) developmentally appropriate curriculum, 4) interaction with families of young children, and 5) significance of poverty, race, and gender for such programs. Prerequisite: child and family studies major or admission to an education graduate program.

EPFA 451†/551**Social Foundations of Education (4)**

Study of sociological theories that illuminate the effects of education on individuals and society. Problem areas in race, class, and gender are explored in the process of examining theories of socialization, certification, allocation, and legitimation and their application to historical and current educational situations.

EPFA 452/552**History of Education (3)**

A general review of the growth and development of education in relation to the civilization of the times; emphasis is placed upon the development of educational theories at various points in history.

EPFA 453/553**History of American Education (4)**

The historical development of the American educational system, from European backgrounds and colonial beginnings to the present time.

EPFA 454/554**Philosophy of Education (4)**

Study and comparison of the philosophical bases of educational ideas and of the educational implications of philosophical thought. EPFA 554 includes an additional, concurrent 30 hour minimum field project requirement.

EPFA 455/555**Gender and Education (4)**

Explores the significance of gender in educational work. The focus will be on the history of gender arrangements in educational organizations and the formation of gender roles in contemporary American society, particularly in the family, schools, and the economy. Students will examine differential socialization of males and females, ongoing practices in educational organizations that are gender-related and/or gender biased and the convergence of gender, race, and class in educational organizations. This course is cross-listed as WS 455, may only be taken once for credit. EPFA 555 includes an additional, concurrent 30 hour minimum field project requirement.

EPFA 456/556**The Urban School and "at Risk" Status (4)**

Draws upon theory, research, and practice for the examination of the conditions of being "at-risk" in urban schools. Explores the family, community, and school environments and their relationships in the hindrance of development of children and youth leading to their "at-risk" status. This course is cross-listed with Urban Studies. EPFA 556 includes an additional, concurrent 30 hour minimum field project requirement.

EPFA 457/557**Cultural Pluralism and Urban Education (4)**

This course is designed to explore the process of education policy development and implementation in culturally diverse, urban environments. The course is organized around several cultural pluralism perspectives; among the topics to be explored are the issues of socialization of the child, governmental operations, educational administration, teacher preparation and curriculum design. EPFA 557 includes an additional, concurrent 30 hour minimum field project requirement.

EPFA 465/565**ELL School Community Relations (3)**

Learn how to work with families to overcome barriers to setting-up support systems in and out of school. Access appropriate community resources that can be critical for ensuring classroom success with ELL students. Gain understanding about other cultures' orientations to education and school. Learn strategies to build bridges between home, school, and the community.

EPFA 466/566**Impact of Language and Culture in the Classroom (3)**

Learn the importance of intercultural communication in working with children from a wide range of cultures in today's classroom. Survey the cultural, linguistic, educational, and ethical issues present in all classrooms today. Study the sociological and language issues and immigration history. Learn how to identify and appreciate cultural factors that affect social adjustment and learning.

EPFA 467/567**ESL/Bilingual Program Design and Models (3)**

Exemplary schools provide second language learners with a rich intellectual diet, not a remedial or basic skills curriculum. They expect all students to achieve high standards in literacy and other academic areas. Learn how these schools combine their understandings and apply the knowledge of local, state, and federal laws and policies along with pedagogical considerations to create effective programs. Participants will examine a variety of local, regional, and national program models for ESL and Bilingual instruction. This will create opportunities to develop expertise in assessing the critical components of programs serving pre-school through adults.

EPFA 511, 512**Principles of Educational Research and Data Analysis I, II (4,4)**

Research paradigm; measurement and test characteristics; planning and evaluation; library

resources; identifying research problems; planning research; types of research; research designs, central tendency, variability and relationships; sampling, sampling error, and hypothesis testing; crossbreaks; one, two, and multiple group, and multiple independent variable designs; computer applications; information systems. Prerequisite: graduate standing.

EPFA 513**Advanced Research Designs and Data Analysis in Education (4)**

Designs for multiple independent variables; equating designs for multigroups; designs for multiple dependent variables; follow-up procedures for multiple dependent variable designs; selected data collection methods, including questionnaires, interviews, observation, sociology, and objective tests and scales; computer application in the use of selected designs. Prerequisite: EPFA 512.

EPFA 514**Educational Measurement and Assessment (4)**

Minimum competency, norm-referenced, and criterion-referenced tests; classroom student assessment; characteristics and levels of measurement; reliability; validity; interpreting test scores; standardized tests; using performance standards; planning and constructing classroom selection; supply and performance tests; portfolio assessment; evaluating test items. Prerequisite: graduate standing.

EPFA 515**Program Evaluation (4)**

An examination of evaluation theory and approaches and their applications in educational settings. Emphasis is given to program evaluation and to understanding how the usefulness of evaluation results may be increased.

Prerequisite: graduate standing.

EPFA 516/616**Collaborative Ethnographic Research Methods (4)**

Explores if and how a participatory and collaborative form of research will foster knowledge democracy, and give ownership to those whose knowledge it is. Methodologies covered are: different genres of qualitative methods, community-based planning and research, participatory action-research, Gaian participatory science, classical ethnography, auto-ethnography, ethnographic performance, life histories, feminist methodologies, and "dialogue circles."

EPFA 517/617**Ecological and Cultural Foundations of Learning (4)**

Explores how we teach and learn ecologically and what constitutes ecological and cultural ways of knowing. One of the key foundational courses for LECL specialization, this course is beyond simply justifying or advocating that our education should be grounded in ecological principals. Rather it offers an opportunity to engage in critical and comparative analyses of what has been already accomplished and the new areas of innovations in environmental education, mature education, outdoors education, naturalist training, and other such genres.

† Restricted to students in the Child and Family Studies degree program.

EPFA 519
Sustainability Education (4)

Course covers local, national, and global innovation in light of the UN decade for Education for Sustainability (2005-15). We also critically assess earlier traditions such as nature education, environmental education, outdoor education, place-based education, and ecological literacy. Students are involved in developing curriculum and teacher preparation modules for K-12.

EPFA 520
Developmental Perspectives on Adult Learning (4)

Explores professional applications of adult development theory and research to facilitating adult learning in a wide variety of contexts, including formal educational and training programs as well as general environments such as learning organizations. Course includes an additional, concurrent 30 hour minimum field project requirement. Prerequisite: admission to a graduate program.

EPFA 521
Adult Learning (4)

An examination of challenges facing those who plan, implement, and evaluate learning opportunities for adults; alternative approaches and designs. Issues reviewed from perspectives of educational program providers and adult learners. Relevant theory and research will be reviewed. Course includes an additional, concurrent 30 hour minimum field project requirement. Prerequisite: graduate standing.

EPFA 522
Motivating Adult Learners (4)

An examination of the complex relationships between adult development, motivation, and learning. Attention is given to the intra- and interpersonal dynamics that motivate human behavior in general and adult learning and behavior within organizational contexts specifically. Prerequisite: graduate standing.

EPFA 523
Assessing Adult Learning (4)

Introduction to the approaches, processes, and tools that can be used to assess adult learning. Emphasis is given to applications at the classroom and program levels and to practices that themselves contribute to adult learning. Course includes an additional, concurrent 30 hour minimum field project requirement. Prerequisite: graduate standing.

EPFA 525
Student Services in Higher Education (4)

Provides an introduction to the professional field of student affairs within the context of colleges and universities, including its historical, philosophical, ethical, and theoretical foundations. Current and future issues for the profession are also critically examined. Course includes an additional concurrent 30-hour minimum field project requirement. Prerequisite: graduate standing.

EPFA 526
Facilitating Student Success in Postsecondary Education (4)

Provides an introduction to theory and research related to factors and conditions that affect stu-

dent success in postsecondary education and to assessment approaches and techniques in student services. Informed by theory, research, and practice, students develop an intervention proposal related to facilitating student success and a plan for assessing that intervention. Prerequisite: graduate standing.

EPFA 527
Legal Issues in Higher Education (4)

Provides a general introduction to the law related to higher education and professional practice in colleges and universities. In addition to the substance of related law, the course explores how the law is applied to rules and policy and how ethical standards and principles impact that application. Course includes an additional concurrent 30-hour minimum field project requirement. Prerequisite: graduate standing.

EPFA 528
Leadership in Postsecondary Education (4)

Examines emerging conceptualizations and forms of leadership and leadership development in postsecondary education. Ethical and value bases of leadership inform a focus on the creation of organizational and social change within postsecondary settings. Course emphasizes non-hierarchical models of leadership that value diversity and involve collaborative relationships and collective action. Application of leadership development issues within a variety of educational and social service organizations are explored. Course includes an additional concurrent 30-hour minimum field project requirement.

EPFA 533
Planning and Budgeting in Postsecondary Education (4)

Provides an introduction to the planning and budgeting processes used in colleges and universities. Major emphasis is placed on key concepts, planning models, and applications to institutional cases. Strategies for linking planning and budgeting function will be explored. Students will examine and use various planning and budgeting tools and techniques. Budget reduction and the connection between planning and assessment will be examined. Prerequisite: graduate standing.

EPFA 536
Postsecondary Curriculum (4)

Provides an introduction to the field of curriculum or program design for adult learners and introduces students to a process of program planning and development. Curriculum development or design is viewed as both a technical and political process. It also provides a historical and philosophical perspective on postsecondary curriculum, with attention given to review and analysis of current practices and issues, including life-long and collaborative learning. A comprehensive program planning model will be examined. Prerequisite: graduate standing.

EPFA 537
Policy and Governance in Postsecondary Education (4)

An examination of theory and research that relates to how policy is formulated and implemented in postsecondary environments. The course focuses on the policy and governance

role of faculty, administrators, and trustees at the single college or university level, and state and federal roles in postsecondary policy and governance. Prerequisite: graduate standing.

EPFA 538
Contemporary Issues in Postsecondary Education (4)

The course is designed to provide students with an introduction to the study of postsecondary education using as the vehicle a focus on some of the more pressing issues currently facing postsecondary education. The course is designed to increase the capacity for the identification and analyses of issues and the development of positions relative to the issue. Prerequisite: graduate standing.

EPFA 541
The Community College (4)

An introduction to the two-year college in the United States, with an emphasis on the public community college with a comprehensive educational program. Topics include: transfer studies; career education; general education; community services; basic skills education; and student development services. The purpose of the course is to provide students with theoretical and practical knowledge relative to the history, philosophy, students, staff, services, and patterns of organization of the public community college.

EPFA 558
Educational Leadership (4)

Analysis of leadership theories, skills, and techniques as applied to the organization and administration of public education. Prerequisite: graduate standing.

EPFA 559
The Principalship (4)

Designed to develop complementary theoretical and practical understanding of the principalship; to acquire knowledge and to learn practices and skills needed to become a successful first-year principal. Prerequisite: EPFA 569.

EPFA 560
Supervision and Evaluation of Instruction (4)

The role of the supervisor in keeping education geared to the changing demands of society; theories of leadership; group processes and individual conference techniques; action research and related approaches to curriculum change; analysis of concrete supervisory problems.

EPFA 561
Staff Development: Planning, Implementation, and Evaluation (4)

Staff development goals; characteristics of staff development programs; establishing a staff development organization; policy and decision-making; identifying and responding to the concerns of participants; assessing needs; planning and implementation of specific programs; networking; formal and informal methods of evaluation; models for staff development; program evaluation; management information systems; evaluating instructional effectiveness. Prerequisite: graduate standing.

EPFA 562
School and Community Relations (4)

An intensive examination of the school and its environment. Major emphasis is on the linking

mechanisms utilized by the school in interacting with parents, citizens, and special interest groups. Course includes an additional, concurrent 30 hour minimum field project requirement. Prerequisite: graduate standing.

EPFA 563
Human Relations in Educational Organizations (4)

Issues and perspectives in group processes; models for studying groups; principles of group dynamics; human relations within educational organizations; strategies for group problem-solving and conflict management; application of group dynamics to leadership, communication, and decision-making within educational organizations; evaluating processes and production of educational groups. Prerequisite: graduate standing.

EPFA 564
Administration of Curriculum (4)

Provides a broad and critical understanding of curricular matters that are relevant and important to administrators: 1) decision making about the choice of content; 2) politics of curriculum development; 3) implementation and monitoring of curriculum at building site; 4) testing and alignment of curriculum; and 5) evaluation of curriculum implementation. Prerequisite: graduate standing

EPFA 568
Educational Organization and Administration (4)

Examination of the role, functions, and responsibilities of the educational leaders and administrators; study of administrative and organizational theory and its application to the operation of educational programs and organizations in various settings, including school districts, higher education and educational divisions in private sector organizations. Course includes an additional, concurrent 30 hour minimum field project requirement. Prerequisite: graduate standing.

EPFA 569
Introduction to Educational Administration (4)

Introductory course required of applicants to the Initial Administrator certificate program. Considers educational, social, political, economic, organizational, and cultural forces shaping U.S. public schools and their administration. Course includes an additional, concurrent 30 hour minimum field project requirement.

EPFA 570
Human Relations and Educational Foundations (4)

Explores the historical, social, philosophical, and organizational foundations of public education. Examines the dynamics of human relationships, leadership, and community building in schools and educational settings. Analyzes public education goals and decision-making processes for achieving these goals. Prerequisites: admission to initial administrator program; EPFA 569.

EPFA 571
Teaching, Learning, and Curriculum (4)

Examines the complex relationships between staff evaluation, individual professional development, staff development, and effective teach-

ing, learning, and curriculum. Students will examine those factors which make supervision and evaluation really work, i.e., contribute to the larger purpose of building an environment where teachers can deliver their best and children can learn most. Prerequisite: EPFA 570.

EPFA 572
Human Resource Development and Organizational Change (4)

Examines how the relationships between people and organizational structures, policies, and processes influence school culture and change efforts. Studies how school leaders secure and manage resources to improve teaching and learning for all within the school community. Prerequisite: EPFA 571.

EPFA 573
Educational Leadership Project I (1)

Focus on the development, in a school or agency setting, of an Educational Leadership Project demonstrating knowledge, skills, and dispositions required by the TSPC Initial Administrator License Standards. The first quarter of a three quarter project designed in conjunction with a practicum supervisor to address a leadership challenge area in teaching and learning for student success within an assigned practicum setting. Students will define the challenge area, research the problem context and related literature, and develop an action plan. Prerequisite: admission to Initial Administrator Licensure Program.

EPFA 574
Education Leadership Project II (1)

Focus on the implementation, in a school or agency setting, of an Educational Leadership Project demonstrating knowledge, skills, and dispositions required by the TSPC Initial Administrator License Standards. The second quarter of a three quarter project designed in conjunction with a practicum supervisor to address a leadership challenge area in teaching and learning for student success within an assigned practicum setting. Students will implement their action plan by collecting, organizing, and analyzing data. Prerequisite: admission to the Initial Administrator Licensure Program, EPFA 573.

EPFA 575
Educational Leadership Project III (1)

Focus on final analysis of an Educational Leadership Project demonstrating knowledge, skills, and dispositions required by the TSPC Initial Administrator License Standards. The third quarter of a three quarter project designed in conjunction with a practicum supervisor to address a leadership challenge area in teaching and learning for student success within an assigned practicum setting. Students will analyze the outcome of their year-long project, suggest implications for further research, and reflect on the entire project. Prerequisite: admission to the Initial Administrator Licensure Program, EPFA 573 and EPFA 574.

EPFA 576
Education, Community, and Society (4)

A review of sociological theories and research that illuminates the social and economic functions of education in modern society, with special emphasis placed on application of the role

of the practicing school administrator as instructional leader and manager. Race, class, gender, and differing ability levels are explored in the process of examining theories of socialization, certification, allocation, and legitimation and their application to historical and current educational situations, particularly in schools and school districts. 30-hours of field-based experiences are used to connect the theories and research covered in class to the practice of schooling and the work of a school administrator. Prerequisite: admission to continuing administrator/initial superintendent licensure program or permission of instructor.

EPFA 577
District and School Staff Supervision and Evaluation (4)

Advanced course in alternative approaches to district and school staff supervision and evaluation in an era of school reform, heightened accountability, and emerging state and national standards. Topics to be covered are dealing with the at-risk and incompetent staff and new directions in teacher evaluation. 30-hours of field-based experiences are used to connect the theories and research covered in class to the practice of schooling and the work of a school administrator. Prerequisite: admission to continuing administrator/initial superintendent licensure program or permission of instructor.

EPFA 578
Communication and Conflict Management in Educational Organizations (4)

Issues of communication within educational organizations and between educational organizations and various audiences. Definitions of conflict and models for peaceful resolution/management of conflict within educational organizations and with various other individuals and organizations. Attention to world view, cultural styles, positions, underlying needs, bargaining, reforming, and finding common ground. Strategies for group problem-solving, conflict management including collective bargaining and contract management, and community-building. 30 hours of field-based experiences are used to connect the theories and research covered in class to the practice of schooling and the work of a school administrator. Prerequisite: admission to continuing administrator/initial superintendent program or permission of instructor.

EPFA 579
Curriculum, Instruction, and Assessment Leadership (4)

An examination of standards-based reform, curriculum and instructional models, assessment models, school improvement strategies, and educational change theories. Emphasis is given to understanding how assessment information can be used to improve student learning and overall school performance within the context of Oregon's state reform framework. 30 hours of field-based experiences are used to connect the theories and research covered in class to the practice of schooling and the work of a school administrator. Prerequisite: admission to continuing administrator/initial superintendent program or permission of instructor.

**EPFA 580
District Policy, Operations, Facilities, and Finance (4)**

The role of the district superintendent and local school boards in planning, management, evaluation, and improvement of policies and programs related to school operations, personnel, facilities, and finance to meet school district needs. Examines state and federal laws, regulations, and the roles of ODE and the legislature in governing Oregon school finance, school budgeting, and school facilities. 30 hours of field-based experiences are used to connect the theories and research covered in class to the practice of schooling and the work of a school administrator. Prerequisite: admission to continuing administrator/initial superintendent licensure program or permission of instructor.

**EPFA 581
U.S. and Oregon School Law and Policy (4)**

Examines federal and Oregon school law governing educational practice and policy at the school and district levels; the relationships among these factors and their implications for effective communication with educational stakeholders, instruction and student learning, and effective organizational management of schools. 30 hours of field-based experiences are used to connect the theories and research covered in class to the practice of schooling and the work of a school administrator. Prerequisite: admission to continuing administrator/initial superintendent licensure program or permission of instructor.

**EPFA 582
Teaching, Learning and Curriculum I (2)**

Examines the role of effective school leadership for best practices in teaching, learning and curriculum which promote the success of all students. Students will examine those factors which make supervision and evaluation really work, i.e., contribute to the larger purpose of building an environment where teachers can deliver their best and children can learn the most. Prerequisite: admission to Initial Administrator Licensure Program. Must be taken concurrently with EPFA 570.

**EPFA 583
Teaching, Learning and Curriculum II (2)**

Examines the complex relationships between staff evaluation, individual professional development, staff development, and effective teaching, learning, and curriculum. Students will formulate a working knowledge of the change process, staffing, program, and faculty needs within an educational setting through problem-based learning. Prerequisites: admission to Initial Administrator Licensure Program, EPFA 570 and EPFA 582. Must be taken concurrently with EPFA 572.

**EPFA 594
School Law (4)**

Critical analysis of the legal framework governing school law in the United States, with emphasis on contemporary legal problems of education. Implications of landmark and current court decisions. Prerequisite: graduate standing.

**EPFA 601
Research (Credit to be arranged.)****EPFA 602
Independent Study (Credit to be arranged.)****EPFA 603
Dissertation (Credit to be arranged.)****EPFA 604
Cooperative Education/Internship (Credit to be arranged.)****EPFA 605
Reading and Conference (Credit to be arranged.)****EPFA 606
Special Problems/Projects (Credit to be arranged.)****EPFA 607
Seminar (Credit to be arranged.)****EPFA 608
Workshop (Credit to be arranged.)****EPFA 609
Practicum (Credit to be arranged.)****EPFA 610
Selected Topics (Credit to be arranged.)****EPFA 658
Social, Historical, Philosophical, and Cultural Foundations of Education (4)**

Seminar for education doctoral students providing a detailed exploration of texts with a focus on the institutional aspects of education, the intellectual currents that have supported it, and the social constructs that maintain it. Cultural, historical, social, philosophical, and critical and feminist perspectives as well as modernist viewpoints are included. Participants will read in-depth and write analytical response papers as a grounding for discussion in the seminar and will produce an end of term project or research paper. Prerequisite: admission to the Graduate School of Education doctoral program or permission of instructor.

**EPFA 659
Theory, Research, and Practice in Educational Administration (4)**

Seminar for education doctoral students providing a detailed exploration of research and theory development in the field of educational administration. Participants will read in-depth and write analytical response papers as a basis for discussion in the seminar and will produce a term project or research paper. Prerequisite: admission to the Graduate School of Education doctoral program or permission of instructor.

**EPFA 801
Research (Credit to be arranged.)****EPFA 802
Independent Study (Credit to be arranged.)****EPFA 804
Cooperative Education/Internship (Credit to be arranged.)****EPFA 805
Reading and Conference (Credit to be arranged.)****EPFA 806
Special Problems (Credit to be arranged.)****EPFA 807
Seminar (Credit to be arranged.)****EPFA 808
Workshop (Credit to be arranged.)****EPFA 809
Practicum (Credit to be arranged.)****EPFA 810
Experimental Course (Credit to be arranged.)**

Special Education and Counseling

COUNSELING

**Coun 199
Special Studies (Credit to be arranged.)****Coun 401/501
Research (Credit to be arranged.)****Coun 402/502
Independent Study (Credit to be arranged.)****Coun 403/503
Thesis (Credit to be arranged.)****Coun 405/505
Reading and Conference (Credit to be arranged.)****Coun 406/506
Special Problems (Credit to be arranged.)****Coun 407/507
Seminar (Credit to be arranged.)****Coun 408/508
Workshop (Credit to be arranged.)****Coun 409/509
Practicum (Credit to be arranged.)****Coun 410/510
Experimental Course (Credit to be arranged.)****Coun 425/525
Guidance for the Classroom Teacher (3)**

A study of the responsibilities and procedures of teachers for guiding students at all levels in becoming more effective and capable persons. Recommended prerequisites: completion of 135 credits; student teaching or teaching experience.

**Coun 431/531
Foundations of Substance Abuse Counseling (3)**

Provides an overview of the biological, psychological, social, and spiritual dimensions of addictions and addictive behavior. Addictive behaviors are presented as part of a continuum of mental and emotional disorders. Emphasizes the biological substrate and development course of addictions and the relationship of addictive behavior to common psychological disorders. Models and theories of addictive behavior that the professional counselor needs to understand when treating clients with addictive and co-occurring disorders are reviewed.

**Coun 432/532
Assessment and Diagnosis of Substance Abuse (3)**

Focuses on the development of the knowledge and skills of assessment and diagnosis of psychoactive substance use disorders.

**Coun 437/537
Current Issues in Addictions Counseling (3)**

Presentation of current issues and new developments in the treatment of substance abusing clients. Emphasis is on new knowledge from research and current trends in treatment with particular focus on the interface between chemical dependency and mental health.

**Coun 441/541
Introduction to Counseling (3)**

The need for counseling services in schools; tests, inventories, questionnaires, and records; the role of the home and the community in

counseling; individual and group counseling; consultation; career counseling; orientation to professional groups, ethics, and current issues and trends. Recommended prerequisite: completion of 135 credits.

**Coun 445/545
Youth at Risk (3)**

Designed to provide participants with an overview of information focused on counseling and teaching youth-at-risk. Emphasis will be placed on identifying youth-at-risk for depression, suicide, eating disorders, pregnancy, AIDS, use and abuse of alcohol and drugs, homelessness, gang membership and several other at-risk behaviors. Ideas for primary, secondary and tertiary prevention from individual, family, school and community perspectives will also be presented. Particular attention will be paid to guidelines for development of tragedy response plans for school campuses in conjunction with the topic of tertiary prevention. Presented in a varied format structured to include lecture/discussion, audio-visual presentations, participant self-evaluation of their own at-risk behaviors, role-plays and small group discussion.

**Coun 504
Internship (Credit to be arranged.)**

**Coun 526
Effective Teaching (2)**

Designed to meet the education and student teaching requirements for track II school counseling students. Topics covered include effective teaching strategies designed to help school counselors-in-training to meet the TSPC prescribed teaching competencies: planning for instruction, establishing a classroom climate conducive to learning, implementing instructional plans, evaluating pupil achievement, fostering professional relationships, and addressing organizational expectations. Students are required to complete a 200-hour teaching practicum in the field (125 hours of observation and 75 hours as classroom teacher) and complete a work sample. Students are expected to complete two credits per term during one school year for a total of six credits. Restricted to students admitted to the track II school counselor specialization.

**Coun 527
Counseling Individuals
with Diverse Needs (3)**

Designed to prepare counselors to provide collaborative services for individuals with diverse needs in elementary, secondary, and postsecondary educational settings. Topics will include an overview of the legal mandates that impact educational requirements and services for students with disabilities, including eligibility and various types of disabling conditions related to educational success. Issues related to counseling students and family members, transitional planning, and collaborating with special educators and other services providers will also be covered.

**Coun 533
Treatment of Substance Abuse I (3)**

Focuses on the development of the knowledge and skills of treatment planning and implementation. Reviews the various modalities of substance abuse treatment along with the efficacy and indications for use of each modality.

**Coun 534
Treatment of Substance Abuse II (3)**

Focuses on the development of the knowledge and skills of substance abuse treatment for diverse client populations. Examines the ethical issues involved in addictions counseling and the responsibilities for continuing professional development for the addiction specialist. Focus is on both theoretical and practical skills.

**Coun 535
Dual Diagnosis (3)**

Focuses on the development of knowledge, skills, and theoretical framework applicable to the diagnosis and treatment of co-occurring disorders. It provides an understanding of chemical dependency and mental health and looks at best practice models.

**Coun 536
Addictions Counseling Capstone (3)**

Provides participants with an opportunity to research and present material relating to a specific topic, treatment approach, or client population, and which demonstrates mastery of the information presented in the addiction counseling series. The final work product is to demonstrate an integration of the knowledge from the courses.

**Coun 542, 543
Interpersonal Relations I, II (3, 3)**

Development of the self. Emphasis on creative growth and the nature of interaction with others. Communication and belief systems in relation to self-acceptance. To be taken sequentially.

**Coun 551
Theories and Interventions I (3)**

This course is designed for those who wish to increase their understanding of counseling theory, interventions (techniques, strategies) and research. The Psychoanalytic Jungian, Adlerian, Client-Centered and Gestalt approaches to counseling will be studied; the focus will be on the three parameters mentioned above. Course content can be applied to both individual and group counseling. Prerequisites: Coun 541, 542.

**Coun 552
Theories and Interventions II (3)**

This course is designed for those who wish to increase their understanding of counseling theory, interventions (techniques, strategies) and research. The Transactional Analysis, Rational-Emotive, Reality and other cognitive behavioral approaches to counseling will be studied; the focus will be on the three parameters mentioned above. Course content can be applied to both individual and group counseling. Prerequisites: Coun 541, 542, 551.

**Coun 553
Advanced Therapeutic Strategies (3)**

Focuses on advanced interventions for clients seeking personal counseling. Emphasis is focused upon cognitive-behavioral, brief therapy, and selected experiential interventions and their use in treatment planning. The theory and research connected with the application of these interventions in the treatment planning process is also addressed. Prerequisites: Coun 551, 552.

**Coun 555
Counseling Children and Youth (3)**

Theoretical overview of growth and development of children and youth. Emphasis on translating theory into practice through a "person-environment interaction" conception of counseling, consultation, and educational intervention in school settings.

**Coun 566
Appraisal Instruments (1)**

Accompanies Coun 567 and is intended to be an evaluation and application practicum of tests used in each counselor education specialty track. Must be taken concurrently with Coun 567.

**Coun 567
Using Tests in Counseling (3)**

The course is a graduate level introduction to testing. It offers the student the option of test usage in the counseling process and introduces issues related to such usage. In addition, the course acquaints the student, through hands-on experience, with test taking, scoring, norming, profiling and interpreting. Prerequisite: Coun 541.

**Coun 568
Career and Lifestyle Planning (3)**

This course examines the theoretical research foundation for career choices, factors that influence choices, the role of information, the skills and practices of effective helpers, the exploration/testing/labor market information sources which contribute to the value choices that are made, and related issues and problems. Prerequisite: admission to the program and Coun 541.

**Coun 569
Developmental Foundations
of Counseling (3)**

Theoretical overview of life-span growth and development, emphasizing cognitive-intellectual, cognitive-moral, emotional-self, and social aspects of developmental growth in the human being. Emphasis on translating theory into practice through a "person-environment interaction" conception of counseling, consultation, and educational intervention.

**Coun 570
Ethical and Legal Issues in Counseling (3)**

Designed to further develop the professional identity of counselors by studying the content and application of the ethical standards of the American Counseling Association, the American Psychological Association, and related professional organizations. Also addresses legal issues in counseling and laws that affect the practice of counseling. Course content includes respecting diversity; client welfare; informed consent; confidentiality and privileged communication; records, technology, and court subpoenas; competence and malpractice; boundary issues; child and adolescent clients; family and group counseling; evaluation, testing, and diagnosis; supervision and consultation, conducting research and methods of resolving ethical and legal issues.

**Coun 571
Group Counseling (3)**

This course includes the study of group guidance, group counseling, and group therapy in both school and agency settings. Topics such as

membership roles, leadership styles, stages of group life, nonverbal communication in groups, ethical and professional issues relating to groups, theoretical models for group work, group practice with special groups, and research on group process and outcome will be presented. Students enrolled in the course also will be expected to participate in a co-facilitated, ongoing small group experience which will require sensitivity to the contributions of other group members. Prerequisites: Coun 541, 542, 551, 552.

Coun 572
Systemic Perspectives on Human Sexuality (3)

Designed to provide participants with the opportunity to study the expression of human sexuality and intimacy across the life span as well as strategies to both facilitate healthy sexual development and overcome common sexual functioning problems. Students will be assisted in the process of recognizing personal attitudes and values about various aspects of sexuality and their effect on practice as well as the process of comfortably discussing sexuality with individuals and couples. Also addresses the impact of sexual abuse and sexuality and treatment considerations. Presented in a varied format structured to include lecture/discussion, audio-visual presentations, participant self-evaluation of their own attitudes and values, role-plays and small group discussion.

Coun 573
Contemporary Couples, Marriage, and Family Systems (2)

Focus on contemporary couples, marriage and family systems as they exist in American society today. Explore the past, present, and future of these systems, including changing demographics and their implications for professionals.

Coun 574
Family Life Cycle and Transitions (2)

Intended for graduate students taking the MFT series, this course examines family development as a foundational framework for family therapy. The developmental context provides opportunity to consider symptoms and dysfunction as related to tasks and challenges of reorganization at transition points.

Coun 575
Foundations of Couples, Marriage, and Family Counseling (3)

This course constitutes an introduction to the theory and methodology of marriage and family counseling. Attention is given to the major family interactional patterns which lead to family system breakdowns as well as the development of skills in the identification of such patterns. Family process assessment techniques, beginning work with families, dealing with resistance in family counseling, use of "self," doubling, sculpting, etc., are interventions which are taught using an experiential format.

Coun 576
Parents, Families, and Communities in Schools (3)

Examines effective methods for including parents, families, and communities in schools. Emphasizes a systems perspective that includes consultation and collaboration in addressing academic, career, and personal/social success for

all students. Family dynamics and influences on school success will be addressed. Application of school counseling consultation, collaboration, and family support for all students will result in a school-based project integrated into a school's comprehensive counseling program.

Coun 577
Family Therapy (3)

Analyze the range of normative/paranormative problems experienced by family members, particularly in parental and parent/child relationships. Examine family case studies and participate in role playing activities geared to enhance family therapy skills. This course is a prerequisite for the internship.

Coun 578
Couples Therapy (3)

Students learn to conceptualize and intervene systematically with couple units. Attention is given to maintaining therapeutic balance, developing an intersystem treatment plan, and asking systemic/interactional questions. A major emphasis is supervised skill practice through role play.

Coun 579
Advanced Systemic Interventions: Couples and Families (2)

Intended for graduate students taking the MFT series, this course analyzes current therapeutic assessment tools and interventions grounded in systemic theory/research as they pertain to family transitions. Success in this course builds upon requisite mastery of major systemic concepts that have to do with systemic function, structure, and motivation as related to assessing similarities and differences between normative and paranormative marriage and family life transitions. Appropriate systemic assessment integrates with systemic therapeutic interventions in resolving crisis resulting from family transitional difficulty, chronic illness, divorce, separation, remarriage, death.

Coun 580
Supervision (1)

Presents a systemic model of clinical supervision and its application to the supervisory process. Relationship of the model to existing conceptual and empirical literature also overviewed. Techniques and skills for debriefing and mentoring supervisees also addressed.

Coun 581
Multicultural Perspectives in Counseling (3)

A study of the human, ecological and societal forces influencing the provision of counseling services to culturally diverse students and other clients in educational and community settings. Current issues, problems and trends will be examined. Increased competence in individual and group counseling strategies and techniques will be emphasized, using didactic and experiential approaches. Prerequisite: Coun 541.

Coun 582
Research and Program Evaluation in Counseling (3)

Covers the areas of research design, basic psychometric principles and statistical procedures, test/scale construction, needs assessment, pro-

gram evaluation, use of library as a research tool, and writing research reports. Specific counseling applications to community, rehabilitation, and school settings are made.

Coun 583
Job Placement and Development (3)

Designed to provide students with a solid understanding of job placement principles, practice and knowledge needed to assist people with disabilities in securing and maintaining employment, and job development and marketing techniques required for seeking both competitive and supported employment.

Coun 585
Diagnosis and Treatment Planning I (3)

First in a sequence of two courses introducing students to the diagnosis and treatment of psychiatric disorders as outlined in the current Diagnostic and Statistical Manual of Mental Disorders. Emphasis on diagnostic reasoning, basic map and thinking process embedded in the current Manual. Use of decision trees to arrive at accurate diagnoses. Overview of conditions covered in the Manual. Prerequisite: Coun 541.

Coun 586
Psychopharmacology and Mental Illness (3)

Examines important psychotropic medications and their therapeutic applications. Drug efficacy, side effects, treatment of specific disorders such as anxiety and mood disorders, psychoactive substance use disorders, and schizophrenia. Prerequisite: Coun 541.

Coun 587
Foundations of Mental Health Services (3)

Examines community mental health movement, policy, service sequence, and related legislation; organization and delivery of mental health services at the federal, state, and local levels; influences and trends in service delivery. Prerequisite: Coun 541.

Coun 588
Diagnosis and Treatment Planning II (3)

Second in a sequence of two courses that examine the diagnosis and treatment of mental disorders, as outlined in the current *Diagnostic and Statistical Manual*.

Coun 589
Action Research in Counseling (1)

Designed to enable counselors to conduct action research in counseling settings. Development of an action research project directly related to improving comprehensive counseling programs. Emphasizes developing research projects that address the academic, career, and personal/social success of all students. Course is restricted to counselor education students enrolled in internship. One credit per term.

Coun 590
Foundation of Rehabilitation Counseling (3)

Introductory course for students pursuing graduate study in rehabilitation counseling and is also oriented toward students with a more peripheral interest in related human service fields. Intended to provide a broad overview of the profession of rehabilitation counseling with an emphasis on both theoretical and practical aspects of the field. Prerequisite: Psy 534 or Coun 541.

Coun 591**Medical Aspects of Disability (3)**

Covers the most common physical, sensory, and mental disabilities encountered by the rehabilitation professional. The major symptomatology, diagnostic procedures, treatment modalities, functional implications, and psychosocial and vocational correlates of each disabling condition will be discussed. Prerequisite: Coun 590.

Coun 592**Psychosocial Aspects of Disability (3)**

Covers the psychological and social aspects of adjustment and adaptation to a variety of disabling conditions. Theoretical and practical issues relating to various types of physical, psychiatric, mental and social disabilities will be examined and discussed. Prerequisite: Coun 590.

Coun 593**Case Management (3)**

Students will study case management systems and skills as used in both public and private rehabilitation and related other human service agencies. Topics covered include case identification, referral, eligibility determination, assessment, goal setting, plan development, intervention strategies, case monitoring, inter-agency coordination, advocacy, promotion of self-advocacy by client, software systems, information flow, organizational structures, time management, critical case management skills, funding sources and billing, as well as other topics of interest to the student. Prerequisite: Coun 590.

Coun 594**Occupational Analysis/
Vocational Evaluation (3)**

Content and experiences presented through this course are design to familiarize the student with the basic principles and imperatives of occupational analysis and vocational evaluation and how these are applied and used in real world settings. Didactic instruction, experiential research, and collegial participation will be used to help students integrate course teachings into a core of personal and professional understanding which can then be applied to many different settings or systems. Prerequisite: Coun 590.

Coun 595**Contemporary Issues and Applications in
Rehabilitation Counseling (3)**

Covers contemporary issues in the field of rehabilitation counseling as well as recent applications of rehabilitation theories, technologies, assessment procedures, and counseling modalities, to a variety of rehabilitation settings and across rehabilitation populations.

Coun 596**Foundations of School Counseling (3)**

Introductory course for students pursuing graduate study in the specialized field of school counseling. Intended to provide a broad overview of the school counseling profession with an emphasis on both theoretical and practical aspects of comprehensive school counseling programs. Field study required.

Coun 601**Research (Credit to be arranged.)****Coun 602****Independent Study (Credit to be arranged.)****Coun 603****Dissertation (Credit to be arranged.)****Coun 604****Cooperative Education/Internship (Credit to be arranged.)****Coun 605****Reading and Conference (Credit to be arranged.)****Coun 606****Special Problems/Projects (Credit to be arranged.)****Coun 607****Seminar (Credit to be arranged.)****Coun 608****Workshop (Credit to be arranged.)****Coun 609****Practicum (Credit to be arranged.)****Coun 610****Selected Topics (Credit to be arranged.)****Coun 801****Research (Credit to be arranged.)****Coun 802****Independent Study (Credit to be arranged.)****Coun 804****Cooperative Education/Internship (Credit to be arranged.)****Coun 805****Reading and Conference (Credit to be arranged.)****Coun 806****Special Problems (Credit to be arranged.)****Coun 807****Seminar (Credit to be arranged.)****Coun 808****Workshop (Credit to be arranged.)****Coun 809****Practicum (Credit to be arranged.)****Coun 810****Experimental Course (Credit to be arranged.)****SPECIAL EDUCATION****SpEd 199****Special Studies (Credit to be arranged.)****SpEd 401/501****Research (Credit to be arranged.)****SpEd 402/502****Independent Study (Credit to be arranged.)****SpEd 403/503****Thesis (Credit to be arranged.)****SpEd 404/504****Cooperative Education/Internship (Credit to be arranged.)****SpEd 405/505****Reading and Conference (Credit to be arranged.)****SpEd 406/506****Special Problems (Credit to be arranged.)****SpEd 407/507****Seminar (Credit to be arranged.)****SpEd 408/508****Workshop (Credit to be arranged.)****SpEd 409/509****Practicum (Credit to be arranged.)**

Consent of instructor.

SpEd 410/510**Experimental Course (Credit to be arranged.)****SpEd 418/518****Survey of Exceptional Learners (3)**

Overview of working with exceptional individuals, including special education and multicultural differences. Nature of diversities (including the talented and gifted) and educational ramifications for the teacher. Recommended prerequisite: Psy 311.

SpEd 455/555**Working With LEP Children Who Have
Special Needs (2)**

Examine the current research in special education and see where it is appropriate in working with the Limited English Proficient (LEP) child. Consider issues including testing and diagnosis, appropriate teaching material and method, and placement. Discuss political, social, and community concerns in working with LEP students with special needs.

SpEd 460/560**Outdoor Education/Recreation With
Persons With Disabilities (6)**

Course provides a supervised practicum in a variety of outdoor activities with children, youth, and adults with disabilities. Students serve as counselor trainees, under the guidance of experienced outdoor specialists and teachers in a residential program located at the Mt. Hood Kivwanis Camp. Emphasis on learning from and about persons with disabilities, teamwork within living groups, and developing outdoor and leadership skills.

SpEd 480/580**Introduction to Early Intervention/Early
Childhood Special Education (3)**

Provides historical, social, and legal foundations for early intervention and early childhood special education and other services to young children with special needs. Introduces concepts and processes for screening and assessment, family-centered planning, blending developmentally and individually appropriate practices, providing learning opportunities in natural early childhood settings, planning environments and activities to include all children, and transition planning. Recommended prerequisites: admission to program or permission of instructor.

SpEd 481/581**Family Guided Early Intervention (3)**

Develops knowledge and skills necessary for providing early intervention services to infants and toddlers with developmental delay/disabilities and their families.

SpEd 482/582**Specialized Techniques: Early
Intervention/Early Childhood Special
Education (3, 3)**

Develops specialized knowledge and skills necessary for providing early intervention and early childhood special education services to infants, toddlers, and preschool children with severe and multiple disabilities, including children with physical and sensory impairments, children with health impairments, and children with autism.

SpEd 483/583**Communication and Language
Development: EI/SE (Early Intervention/
Early Childhood Special Education) (3)**

Designed to provide information about typical and atypical communication development,

birth through early childhood. In addition, information will include strategies for EI/SE to promote communication development for all children. Recommended prerequisites: SpEd 480/580 and admission to program.

**SpEd 512
Diagnostic Assessment (3)**

Examination and application of diagnostic/assessment procedures and instruments used to appraise current academic performance of K-12 students with intellectual, learning, and behavioral disabilities. Prospective special education teachers will develop the foundational knowledge and skills to: collect background information on students; select, administer, and interpret the results of norm-referenced assessment tools; and develop reports that are meaningful to teachers and parents and abide by federal, state, and professional guidelines. Prerequisites: SpEd 519 and admission to program.

**SpEd 513
Classroom Based Assessment and Instructional Planning (3)**

Informal, formative, ongoing assessment techniques for students with special needs in special and regular education settings. Using information from assessments to make instructional decisions and for IEP documentation and planning. Prerequisites: SpEd 519 and admission to program.

**SpEd 514
Methods of Teaching Academics (3)**

Emphasis on instructional programming and teaching techniques for implementing language arts, reading, and mathematics curricula for students with disabilities. Prerequisites: SpEd 418/518 and admission to certificate program.

**SpEd 515
Methods of Teaching Life Skills (3)**

Emphasis on life skills programming and teaching techniques for implementing the functional curriculum. These curriculum areas include: communication, leisure education, vocational, gross/fine motor, social/sexual and self-help for students with disabilities. Prerequisites: SpEd 418/518 and admission to certificate program.

**SpEd 516
Consulting and Team Planning (3)**

A study of practices and techniques for implementing a transdisciplinary team approach to collaborating with parents, related service staff, regular educators, administrators, and medical personnel. Prerequisites: SpEd 418/518 and admission to certificate program.

**SpEd 519
Principles of Special Education (3)**

Prepares students entering special education with basic knowledge, skills, and values necessary for future success in their profession. Major overview of theory and research underlying delivery of special education services in the public schools. Intensive study of career planning, graduate writing and research, information systems, current legislation, teaching and learning theory, curricular models, and professional ethics and standards. Pre- or co-requisite: SpEd 418/518.

**SpEd 520
Collaboration I: Families and Community— EL and EI/SE (3)**

Designed to develop knowledge in the areas of family systems theory, strengths-based model, information gathering techniques, and collaboration techniques with families and professionals. Information related to cultural competence is infused throughout the course. In addition, students receive information on grief related to having a child with a disability and the death of a student. Students are required to participate in a family conversation project to identify family strengths, concerns, and resources with a family who has a child with special needs. Prerequisites: SpEd 519 and admission to program.

**SpEd 521
Behavior Management in the Classroom (3)**

Primary emphasis will be on observation of classroom behavior with concomitant development of alternatives for intervention in helping children develop more appropriate behavioral skills.

**SpEd 522
Collaboration II: Inclusion Strategies (ECE/Elementary) (3)**

Designed to help preservice teachers learn collaborative strategies that facilitate the inclusion of students with disabilities into the general education program. Prerequisites: SpEd 520 or permission of instructor.

**SpEd 523
Collaboration I: Work-Based Learning and Transition (Mid-level/High School) (3)**

Designed to help preservice teachers learn collaborative strategies that facilitate the inclusion of students with disabilities in the areas of career development and transition planning. Prerequisites: SpEd 519 and admission to program.

**SpEd 524
Collaboration II: Schools and Inclusion Strategies (Mid-level/High School) (3)**

Designed to help preservice teachers learn collaborative strategies that facilitate the inclusion of students with disabilities into the general education program. Prerequisites: SpEd 523 or permission of instructor.

**SpEd 525
Student Teaching (6-12)**

Observation and teaching under the direction of a supervising teacher. Opportunities for assuming direct responsibility for the learning activities of the disabled learner, for developing skill in techniques of teaching and schoolroom management, and for participating in the life of the school. Prerequisite: Satisfactory completion of SpEd 509 Directed Field Experience II.

**SpEd 526
Instructional Methods I: Literacy (Elementary) (3)**

Designed to help preservice teachers learn methods and curriculum for teaching reading and language arts skills to children with special needs. Prerequisites: SpEd 519, Ed 511, and admission to program.

**SpEd 527
Instructional Methods II: Math (Elementary) (3)**

Students will examine curriculum and learn explicit methods for teaching mathematics concepts and skills to children with special needs. Prerequisites: SpEd 519 and admission to program.

**SpEd 528
Instructional Methods I: Literacy (Mid-level/High School) (3)**

Develops knowledge and practices for teaching reading, writing, and other literacy skills to middle and secondary students with high incidence disabilities. Curriculum and instructional methods for students who are emergent, developing, and fluent readers and writers are addressed. The development of student's use of learning strategies to become more independent and effective learners is described. Prerequisites: SpEd 519, Ed 511, and admission to program.

**SpEd 529
Instructional Methods II: Math and Content Instruction (Mid-level/High School) (3)**

Purpose of this course is for preservice and practicing educators to develop the knowledge and skills to effectively teach mathematics and other content area subjects to students with mild disabilities in middle/secondary schools. Educators will learn how to use instructional methods and content enhancement devices to make curricular content more accessible for students with disabilities. Strategies for promoting retention, application, and generalization of content learning will also be examined. Prerequisites: SpEd 519 and admission to program.

**SpEd 532
Functional Assessment and Curriculum I (4)**

Develops philosophical and social foundations for services to individuals with significant and multiple disabilities, early childhood through adulthood. Emphasizes ecological and functional assessment strategies for life skills, communication, social, motor, and functional academic domains. Strategies for including students with significant and multiple disabilities in system-wide, standards-based assessment are addressed. Prerequisite: admission to appropriate special education cohort or permission of instructor.

**SpEd 534
Functional Assessment and Curriculum II (4)**

Applies knowledge and skills for functional assessment and applied behavior analysis in the design and implementation of an individualized, functional curriculum for students with significant and multiple disabilities, early childhood through adulthood. Emphasizes curricular content for life skills, communication, social, motor, and cognitive/functional academic domains. Provides instructional strategies for routines-based, naturalistic, and teacher-directed learning. Includes strategies for using positive behavioral supports for students with significant disabilities, based upon functional behavioral assessment and analysis. Prerequisites: SpEd 532 and admission to the program.

**SpEd 536
Specialized Techniques (3)**

Information and skills development for meeting the specialized support needs commonly found with students with significant disabilities. Focus on educational implications considering (1) the nature of the medical condition, (2) methods for instruction (i.e., positioning, mobility), and (3) procedures for structural modifications. Course incorporates information from various disciplines and is designed to assist the educator in becoming an effective member of a transdisciplinary team that serves students with routine and emergency medical and physical needs. Prerequisite: SpEd 418/518 and admission to the program.

**SpEd 540
Education of the Visually Impaired Learner (3)**

Beginning with a historical background of the education of the visually disabled, this course provides an overview of basic information about visually impaired children and youth. Basic programming components and implications for conceptual and motoric development. Basic curricular components necessary for the visually impaired, leading to transition from school to adult life. Prerequisites: SpEd 418/518 and admission to the program.

**SpEd 541
Implications of Vision Problems of Children/ Youth (3)**

Anatomy, physiology, common diseases, and hygiene of the human eye. Emphasis on vision screening, testing, and techniques for evaluation of functional visual skills in the classroom. Focus includes strategies for improving medical/optometric eye reports. Emphasis on working with the regular classroom teacher regarding prevention of potential eye disorders and referral to eye specialists. Prerequisites: SpEd 540 and admission to the program.

**SpEd 542
Assessment of the Visually Impaired (3)**
Examination and application of diagnostic and assessment instruments useful with or modified for visually impaired learners. Designed to prepare teachers of the visually disabled for administering, scoring, and interpreting test results for program planning and implementation. Developmental areas include cognition, social/emotional skills, psychomotor skills, and self-help skills. Prerequisites: SpEd 418/518 and admission to the program.

**SpEd 544
Methods of Teaching Academics: Visually Impaired Learner (3)**

Course focuses upon curricular adaptations for use with the visually impaired learner in the classroom. Academic areas examined and strategies for inclusion for the visually impaired learner in all aspects of the school curriculum. Teaching of Braille, use of abacus for mathematics, and adapted materials. In-depth curricular focus for the multi-disabled child. Prerequisites: SpEd 418/518 and admission to the program.

**SpEd 545
Orientation and Mobility/Life Skills (3)**

Focus on teaching independent travel skills to totally or functionally blind students. Methods and techniques presented to help the special and regular class teacher promote success in daily living skills as well. Prerequisite: SpEd 418/518.

**SpEd 546
Braille I (3)**

The Braille code is presented, to include Grade II literary Braille, and use of the abacus. Prerequisites: SpEd 540 and admission to the program.

**SpEd 547
Braille II (2)**

All special signs and symbols relating to the literary code are learned and special formatting techniques used in printed materials, charts, and graphs. Study of Braille Nemeth Code for mathematics. Prerequisites: SpEd 546 and admission to the program.

**SpEd 551
Job Search Education (3)**

Course designed to teach the latest job finding and leisure search techniques and to improve students' ability to teach job/leisure finding to high school pupils. Course combines lecture and hands-on experiences. Training for teachers and counselors in community agencies. Prerequisite: SpEd 418/518.

**SpEd 552
Sex Education for Persons with Disabilities (3)**

Course examines values and attitudes behind teaching social/sexual skills to persons with mental retardation. Self-esteem building, body image, classroom activities and learning experiences on puberty, menstruation, sterilization, birth control, and sexually transmitted diseases. Prerequisite: SpEd 418/518.

**SpEd 553
Leisure Education for Persons with Disabilities (3)**

Focuses on recreation and leisure as a major aspect of independent living and community adjustment. Roles of the schools in providing a comprehensive leisure education program for students with disabilities. Prerequisite: SpEd 418/518.

**SpEd 556
Career Education for Persons with Disabilities (3)**

Course presents a broad conceptual framework for organizing and developing career education programs for disabled students (elementary/young adult); helps participants gain knowledge which strengthens vocational success for disabled persons; and program models train persons with disabilities in transition from school to community life. Prerequisite: SpEd 418/518.

**SpEd 557
Job Placement and Training (3)**

Techniques, training, and outcomes to assist persons with disabilities obtain and maintain employment.

**SpEd 558
Introduction to Youth in Transition (3)**

Examination of transition services mandated by public laws; application of skills to facilitate school-to-work transition of youth with disabilities; and family partnerships.

**SpEd 559
Professional Practices: Rehabilitation of the Blind (3)**

Overview of blindness and the blindness delivery systems. Roles and responsibilities of those working in social, psychological, educational, recreational, and vocational settings are emphasized. Issues and field overviews.

**SpEd 561
Behavior-Disordered Learner (3)**

Course focuses upon the nature and needs of behavior-disordered youth in educational and social settings. Academic areas as well as strategies for inclusion for the behavior-disordered learner in all aspects of the school curriculum. Prerequisite: SpEd 418/518.

**SpEd 562
Alternate Education for Learning-disabled Children (3)**

Outdoor program focusing on academic instruction and recreational experiences designed to enhance the learning potential of the learning-disabled child. Emphasis is on practical approach for teachers. Prerequisite: SpEd 418/518.

**SpEd 563
Advanced Techniques of Reading (3)**

Primarily concerned with educational methods designed to teach students with severe to moderate response deficits in reading. Prerequisite: CI 474/574.

**SpEd 564
Learning Disabilities (3)**

Concepts, issues, and major sources in the field of learning disabilities: definition, causation and identification, ability vs. task analysis models, perceptual training, and aptitude treatment interaction, early identification, and reading disability.

**SpEd 565
Medical and Legal Aspects for the Disabled (3)**

An examination of the medical and legal aspects of major disabling conditions and implications for management in the special education/rehabilitation setting. Focus on the medical and legal needs of persons with severe disabilities in educational, clinical, and social settings. Prerequisite: SpEd 418/518.

**SpEd 568
Advanced Social Skill Development (3)**

Course for educational professionals serving behaviorally disordered students whose disabilities are considered mild to moderate. Focuses on advanced methods of behavior management that go beyond traditional behavior modification practices. Prerequisite: SpEd 521.

**SpEd 570
Communication Systems for Persons with Severe Disabilities (3)**

Course for students who will be teaching communication skills to persons with severe disabilities, including nonverbal individuals. Examines

specialized systems for teaching communication skills, normal speech, and implementation of communication instruction. Prerequisite: SpEd 418/518.

SpEd 573
Assessment and Planning for Students With Mild Disabilities (3)

Examination and application of diagnostic and assessment instruments used to measure cognitive language abilities and social/emotional functioning. Formal and informal methods of assessment. Prerequisite: SpEd 418/518.

SpEd 575
Braille III/Technology for the Visually Impaired (3)

Study of computer applications for visually impaired learners, including existing and proposed hardware and software that would improve accessibility to print information by visually impaired and blind students. Adaptations of existing technology, evaluation of its effectiveness. Prerequisite: SpEd 540.

SpEd 576
Visually Impaired Learner with Additional Disabilities (3)

Study of visually handicapped students with concomitant disabilities such as hearing impairments, mental retardation, and behavior disorders. Emphasis on curricular adaptations, teaching strategies, and behavior management. Prerequisite: SpEd 418/518.

SpEd 578
Advanced Behavioral Strategies (3)

Intervention strategies for students with severe behavior problems and disorders; focus on education, and non-adversive behavior management strategies. Prerequisite: SpEd 418/518.

SpEd 584
Assessment: EI/SE (3)

Provides an overview of assessment procedures in the field of early intervention/early childhood special education. These procedures include screening and testing using norm-referenced, criterion-referenced, curriculum-based, and observational methods. Reliability and validity of assessments are discussed in relation to standardized testing. Learners have the opportunity to observe and record the behaviors of young children. Assessment strategies such as arena assessment, play-based assessment, parent reporting, and family interviewing. Emphasis on the assessment process for the young child and the family's role in the assessment of the young child with developmental delays or disabilities.

SpEd 585
Instructional Strategies I: EI/SE (3)

Develops knowledge and practices for teaching and facilitating development of children with special needs, birth through the primary grades. Builds upon the student's knowledge of child development and developmentally appropriate practices. Focuses upon the design of individually appropriate practices, principles of applied behavior analysis, activity-based intervention, naturalistic teaching strategies, discrete trial teaching, and positive behavioral supports. Develops knowledge and skills for curriculum-based assessment, design of individual program plans, and use of data collection systems to monitor child progress.

SpEd 586
Instructional Strategies II: EI/SE (3)

Develops advanced knowledge and practices for teaching and facilitating development of children with special needs, birth through the primary grades. Builds upon the student's knowledge of individually appropriate practice, applied behavior analysis, and design of individual and group plans for instruction. Develops knowledge and skills for implementation of specific strategies supported by current research and recommended practices, including strategies to support early relationships, peer interaction, social-emotional development, cognitive development, and early literacy.

SpEd 590
Applied Behavioral Research in Special Education (3)

Study of applied behavioral research in special education. Conceptualization of a variety of research designs appropriate for problems in special education, including multiple baseline design research. Development of hypotheses, definition and measurement of important variables, research design strategies, analysis of data, interpretation and inference, and writing a research report. Prerequisite: SpEd 418/518.

SpEd 591
Issues in Special Education (3)

Review of the major issues related to special education in the United States. Emphasis upon moral, ethical, and legal considerations relative to the habilitation of disabled children and youth. Prerequisite: SpEd 418/518.

SpEd 592
Advanced Studies in Special Education (3)

Review of major philosophical and theoretical bases for learning relative to the unique needs of atypical persons served in special education programs. Overview of the work of Piaget, Skinner, Baumeister, Bandura, Prehm, and others. Prerequisite: SpEd 591.

SpEd 601
Research (Credit to be arranged.)

SpEd 602
Independent Study (Credit to be arranged.)

SpEd 603
Dissertation (Credit to be arranged.)

SpEd 604
Cooperative Education/Internship (Credit to be arranged.)

SpEd 605
Reading and Conference (Credit to be arranged.)

SpEd 606
Special Problems (Credit to be arranged.)

SpEd 607
Seminar (Credit to be arranged.)

SpEd 608
Workshop (Credit to be arranged.)

SpEd 609
Practicum (Credit to be arranged.)

SpEd 610
Selected Topics (Credit to be arranged.)

SpEd 801
Research (Credit to be arranged.)

SpEd 802
Independent Study (Credit to be arranged.)

SpEd 804
Cooperative Education/Internship (Credit to be arranged.)

SpEd 805
Reading and Conference (Credit to be arranged.)

SpEd 806
Special Problems (Credit to be arranged.)

SpEd 807
Seminar (Credit to be arranged.)

SpEd 808
Workshop (Credit to be arranged.)

SpEd 809
Practicum (Credit to be arranged.)

SpEd 810
Experimental Course (Credit to be arranged.)

Maseeh College of Engineering and Computer Science

ROBERT DRYDEN, DEAN
DAN HAMMERSTROM, ASSOCIATE DEAN
MARCIA FISCHER, ASSISTANT DEAN
SUITE 500, ENGINEERING BUILDING
www.cecs.pdx.edu/

B.S.—Civil Engineering, Computer Engineering, Computer Science, Electrical Engineering, and Mechanical Engineering
Minor in Computer Science
Minor in Electrical Engineering
Minor in Environmental Engineering
M.S.—Civil and Environmental Engineering, Computer Science, Electrical and Computer Engineering, Engineering Management, Mechanical Engineering, and Materials Science and Engineering
M.Eng.—Civil and Environmental Engineering, Civil and Environmental Engineering Management, Electrical and Computer Engineering, Engineering and Technology Management (Option in Project Management), Manufacturing Engineering, Mechanical Engineering, Systems Engineering
M.S.E.—Master of Software Engineering
Ph.D.—Civil and Environmental Engineering, Computer Science, Electrical and Computer Engineering
Ph.D.—Participating college in Systems Science Doctoral Program
Ph.D.—Participating college in Environmental Sciences and Resources Doctoral Program

Engineering and computer science offer the challenge and excitement of solving current and future technological problems in computers, electronics, energy, transportation, and the environment. Furthermore, national projections indicate that the need for engineers and computer scientists will increase significantly during the years ahead.

All undergraduate programs require a core of engineering or computer science, mathematics, science, and liberal arts courses. Graduate programs provide extended educational opportunities in various engineering and computer science specialties.

Undergraduate programs

At the undergraduate level, the student may select degree programs in civil engineering, computer engineering, computer science, electrical engineering, and mechanical engineering. Cooperative educational programs with Portland-area industries, government agencies, and engineering consulting offices are available to qualified students.

The degree programs in civil engineering, computer engineering, electrical engineering, and mechanical engineering are accredited by the Engineering Accreditation Commission/Accreditation Board for Engineering and Technology (EAC/ABET), www.abet.org. The computer science program is accredited by the Computing Accreditation Commission/Accreditation Board for Engineering and Technology (CAC/ABET).



Admission requirements

Policy on admission to the engineering programs

Students may declare engineering or computer science as their major at any time after enrolling at Portland State University. However, students must be admitted formally to a specific degree program in civil engineering, computer engineering, computer science, electrical engineering, or mechanical engineering before they will (1) be allowed to enroll in restricted upper-division courses offered by the program and (2) be graduated from that program. Application forms may be obtained from the Dean's Office, Maseeh College of Engineering and Computer Science, Suite 500, Engineering Building. PSU students who anticipate completing all eligibility requirements before the term for which admission to a degree program is sought may apply.

Students transferring from other institutions who want to be admitted formally to a specific engineering degree program (civil engineering, computer engineering, computer science, electrical engineering, mechanical engineering) must:

- ◆ Meet all eligibility requirements.
- ◆ Apply for admission to PSU.
- ◆ Apply for program admission to the Maseeh College of Engineering and Computer Science.
- ◆ Have one copy of their transcripts sent to their engineering or computer science department.
- ◆ Have one copy of their transcripts sent to the Office of Admissions.

Application deadlines for admission to a degree program are:

- ◆ for fall term—June 15
- ◆ for winter term—November 1
- ◆ for spring term—February 1

ELIGIBILITY

To be eligible for admission to a degree program, each student should meet the following minimum requirements:

1. Complete, with a minimum grade of C and a minimum GPA of 2.25, a designated set of courses for each undergraduate degree program as follows:

Civil Engineering. Mth 251, 252, 254, 256, 261; Ch 221, 222, 227, 228; Ph 221[†], 222[†], 223[†], 214, 215, 216; EAS 101, 115, 211, 212, 215; CE 211, 212; UnSt (27 credits) or transfer 27 credits of arts and letters, including WR 121 and Sp 100 (or equivalent).

Mechanical Engineering. The engineering core consisting of Ch 221,

227; EAS 101, 211, 215; ECE 201, 221; Mth 251, 252, 254, 256, 261; Ph 221[†], 222[†], 223[†], 214, 215, 216; Freshman Inquiry[‡] (59 credits).

Electrical Engineering. The engineering core consisting of Ch 221, 227; EAS 101; ECE 171; EAS 102 or CS 161; ECE 201, 221; MTH 251, 252, 253, MTH 261; Ph 221[†], 222[†], 223[†], 214, 215, 216; Freshman Inquiry[†] (65 credits).

Computer Engineering. Ch 221, 227; CS 162; EAS 101, EAS 102 or CS 161; ECE 171; ECE 201, 221; Mth 251, 252, 253, 261; Ph 221[†], 222[†], 223[†], 214, 215, 216; Freshman Inquiry[†] (69 credits).

Computer Science. The computer science core consisting of CS 161, 162, 163, 200, 201, 202, 250, 251; Mth 251, 252, 253; Ph 221[†], 222[†], 223[†], 214, 215, 216; Wr 227; Sp 220; Freshman Inquiry[†] (60 credits).

2. Have a minimum GPA of 2.25 in all engineering and computer science coursework. For computer science students: earn grades of C or better in each computer science course and grades of C- or better in other courses required by the department.
3. Complete a minimum of 90 credits.

Candidates who do not meet all criteria may, upon petition, be granted eligibility when an evaluation of the student's total record justifies such action and they are recommended by the Maseeh College's Academic Appeals Committee.

Selective admission

If the number of eligible applicants for admission to any engineering degree program exceeds that for which resources are available, acceptance will be competitive. In the event selective admission becomes necessary, the GPA computed for the required courses for eligibility for program admission will be used. Priority, within reasonable limits, will be given to resident students.

Although the primary purpose of the selective admission procedures is to limit enrollment to the number of students who can be served at a high level of quality, it is recognized that the rigid application of these procedures may eliminate applicants with high potential but who, due to circumstances beyond their control, have had limited access to the type of preparatory education that is essential to achieving the high performance level required for admission. All such applicants will be considered on the basis of their life experience and leadership qualities in addition to their academic achievement.

CONTINUATION CRITERIA

After admission to a computer science or engineering degree program (civil engi-

neering, computer engineering, electrical engineering, mechanical engineering), students will be expected to make satisfactory progress toward their declared degree and will be subject to the following rules:

1. The term GPA in all courses taken at PSU must be 2.00 or higher.
2. At the conclusion of each term of the academic year full-time students are normally expected to complete a minimum of 12 credits applicable toward their degree program. Part-time students are expected to complete a minimum of 12 credits per year applicable toward their degree program.
3. Students will be placed on probation when their term GPA as described in (1) is below 2.00, or their progress toward the degree is less than that described in (2).
4. Students placed on probation for two consecutive terms or for a total of three terms will be suspended from specific degree programs. Students also will be suspended if not enrolled in engineering and/or computer science courses for three consecutive terms.
5. Students denied admission or suspended must wait at least one term before reapplying. This waiting period does not apply to those denied due to "selective admission."
6. For students pursuing an electrical or computer engineering degree the "term GPA in all courses taken at PSU" in items 1 and 3 above should be replaced by "cumulative major GPA" as the continuation criteria.

APPEALS

Students denied admission or suspended may request reconsideration by submitting a petition. The petition and supporting materials will be reviewed by the appropriate department chair and the Maseeh College's Academic Appeals Committee, and a recommendation will be forwarded to the dean. The appeal must be made within 30 days of notice to the student of denial of admission or suspension.

PASS/NO PASS GRADING POLICY

All courses specifically required by the University or by a particular department must be taken for a letter grade unless a required course is only offered with a pass/no pass option.

Policy on Admission to the Computer Science Program

Students who are intending to graduate with an undergraduate degree in computer science must file the Application for Admission to the Computer Science Program with the Department of Computer Science after completing the lower-division requirements. No more than 8 upper-division computer science

[†] Physics 211, 212, and 213 also accepted
[‡] Sp 100 and Wr 121 for transfer students.

credits (including any approved upper-division transfer credits) taken prior to admission to the program will be counted toward the student's departmental requirement of 44 upper-division computer science credits (CS 300, 305, 321, 322, 333, 350, 386, 487, 488, ECE 341 and 12 credits of upper-division computer science electives). Students also must be in admitted status during the term they intend to graduate.

Graduate programs

The Maseeh College offers graduate programs leading to the degrees of Master of Science, Master of Engineering, Master of Software Engineering, and Doctor of Philosophy.

Master's programs are available in civil and environmental engineering, computer science, software engineering, electrical and computer engineering, mechanical engineering, engineering management, manufacturing engineering, materials science and engineering, and systems engineering.

Ph.D. programs are available in civil and environmental engineering, computer science, and electrical and computer engineering.

In addition, the Departments of Civil and Environmental Engineering, Mechanical Engineering, and Engineering and Technology Management in the Maseeh College of Engineering and Computer Science participate in the single-discipline option of the Systems Science Ph.D. Program and offer discipline-oriented doctoral degrees. The Department of Civil and Environmental Engineering also participates in the Environmental Sciences and Resources Doctoral Program.

Manufacturing Engineering

LL Suite 50
Fourth Avenue Building
503-725-4660
www.etm.pdx.edu/

M.Eng.

Manufacturing engineering is concerned with the application of specialized engineering and managerial knowledge to the development of productive systems involving people and machines. Primary emphasis is on the design, operation, and control of integrated systems for the production of high quality, economically competitive

goods utilizing efficient product design, computer networks, machine tools, robots, and materials-handling equipment.

The master's degree in manufacturing engineering is designed to provide engineering professionals with the opportunity to pursue advanced level study in a field of engineering that involves subject matter normally not covered in basic engineering undergraduate programs.

The program is administered by the Department of Engineering and Technology Management

Admission requirements

Applicants to the program are required to have:

- An undergraduate degree in engineering or a closely related discipline from an accredited institution.
- A combined GPA of 3.0 on the last 90 credit hours of graded undergraduate work plus all work completed thereafter.

Under special conditions, applicants who partially satisfy the above admission requirements may be considered for conditional acceptance, provided they meet all institutional requirements to the campus to which they apply.

International applicants are required to demonstrate proficiency in English by taking the Test of English as a Foreign Language (TOEFL). A TOEFL score of 550 or greater is required of all students whose native language is not English and who have not received a degree from an accredited institution in the United States.

Degree requirements

A total of 45 credits of approved graduate coursework is required to complete the master's degree in manufacturing engineering. The program consists of 30 to 36 credits in the core and 9 to 15 credits in electives. A comprehensive final oral examination is required after the completion of coursework.

Courses satisfying core requirements at each institution:30-36

Analysis

Applied Statistics for Engineers (Stat 551)
 Analysis/Numerical Methods† (ME 551)

Applied statistics

Statistical Process Control (ME 587)
 Design of Industrial Experiments (ME 588)

Manufacturing management

Manufacturing Systems Engineering (EMgt 550)
 Manufacturing Systems Management (EMgt 551)
 Project Management (EMgt 545)
 Communication and Team Building (EMgt 522)

Concurrent engineering

Concurrent Engineering (ME 510)
 Management.....3-9
 Strategic Planning in Engineering Management (EMgt 525)
 Organizational Management (Mgmt 550)
 Financial Accounting (Actg 511)
 Technical specialty electives.....9-15
 Nine to fifteen credits of graduate courses in mechanical engineering, industrial and manufacturing engineering, electrical and computer engineering, engineering management, or computer science. Three to six of these credits may be project work. (For example: 3 to 6 credits of EMgt 506 Projects may be included.)

Oregon Master of Software Engineering

Suite 120
Fourth Avenue Building
503-725-2900
www.omse.pdx.edu

M.S.E.

The Oregon Master of Software Engineering (OMSE) is a part-time professional development and degree program geared toward working software engineers with two or more years of practical software development experience. OMSE's vision is to provide high quality software engineering education and training for the high technology industry and for its engineers.

The curriculum of 13 core courses and three electives is focused on proven industry techniques for developing products. Students will receive a sound practical perspective on the entire software development enterprise—from requirements engineering, system and software design, project management, and software testing—that can be immediately applied to their real-world work environments.

Faculty members have hands-on industry experience as well as strong academic foundations. Courses are held at the CAP-ITAL Center in Beaverton.

More information about the Oregon Master of Software Engineering program is located on our Web site at www.omse.pdx.edu.

Admission requirements

A committee consisting of the OMSE program director and faculty determines admission. Admission requirements are:

- At least two years of software development experience (a work resume is required);

† Other analysis/numerical methods courses may be substituted.

- ◆ A four-year bachelor's degree with a 3.00 GPA;
- ◆ Completion of the following undergraduate-level coursework in computer science: Programming Languages, Discrete Mathematics, Data Structures, Operating Systems, and Computer Architecture

Applicants who partially satisfy the above conditions may be considered for admission on a case-by-case basis. Students needing one or more of the computer science courses may enroll in OMSE courses on a non-admitted basis provided the prerequisites for those courses are satisfied. Upon admission to the OMSE program, students can transfer up to 15 credits (including electives) into the degree program.

In addition, international students may need to provide a TOEFL written score of 600 if their native language is not English. Students who earned undergraduate degrees in the United States are exempt from this requirement.

Degree requirements

The OMSE curriculum comprises 48 credits: 39 credits of core courses and 9 credits of elective courses.

OMSE 500 Principles of Software Engineering
 OMSE 511 Managing Software Development
 OMSE 513 Professional Communication Skills for Software Engineers
 OMSE 521 Using Metrics and Models to Support Quantitative Decision Making

OMSE 522 Modeling and Analysis of Software Systems
 OMSE 525 Software Quality Analysis
 OMSE 531 Software Requirements Engineering
 OMSE 532 Software Architecture and Domain Analysis
 OMSE 533 Software Design Techniques
 OMSE 535 Software Implementation and Testing
 OMSE 551 Strategic Software Engineering
 OMSE 555 Software Development Practicum I
 OMSE 556 Software Development Practicum II

Systems Engineering

Suite 500, Engineering Building
503-725-4262
www.cecs.pdx.edu/Systems/

M.Eng.

Systems engineering focuses on defining customer needs and required functionality early in the development cycle, documenting requirements, then continuing with design synthesis and system validation while considering the complete problem: operations—performance—test—manufacturing—cost and schedule—support—disposal.

Systems engineering integrates all the disciplines and specialty groups into a team effort, forming a structured development process that proceeds from concept

to production to operation. Many of us already practice systems engineering, but call it something else: design or development of product, process, service. This course of study will enable the engineer to function in an interdisciplinary team and apply their area of engineering specialty toward the development of a product, process, or service.

Admission requirements

Minimum three years of responsible engineering experience, baccalaureate degree in engineering, and at least 3.00 GPA for upper-division courses. Conditional admission is based on approval and a study plan specified by the director of systems engineering.

Degree requirements

A total of 45 credits: 16 in systems core; 16 in elective specialty and related engineering areas; 9 in internship/project; and 4 in integrative workshop.

	Credit
Systems core	16
Elective specialty and related engineering areas	16
Integrative workshop	4
Project	9
Total	45

Civil and Environmental Engineering

Suite 200, Engineering Building
503-725-4282
www.cee.pdx.edu/

B.S.—Civil Engineering
Minor in Environmental Engineering
M.S.—Civil and Environmental Engineering
M.Eng.—Civil and Environmental Engineering
M.Eng.—Civil and Environmental Engineering Management
Ph.D.—Civil and Environmental Engineering
Ph.D.—Participating department in Systems Science Doctoral Program
Ph.D.—Participating department in Environmental Sciences and Resources Doctoral Program

Civil and environmental engineers plan, design, and manage the construction and operation of public and private facilities, including highways and transportation systems, power plants, buildings, dams, and water and wastewater treatment facilities.

In addition, they are involved in improving the quality of surface water, rivers, lakes, reservoirs, estuaries, and ground water systems and predicting the quantity of water available for human use.

Undergraduate program

The undergraduate degree program in civil engineering includes required courses in the analysis and design of structures, applied hydraulics, surveying and map-

ping, soil mechanics and foundations, engineering project management, transportation engineering, and environmental and water resources engineering.

To introduce civil engineering students to professional practice, the American Society of Civil Engineers (ASCE) sponsors a student chapter at Portland State University.

The civil engineering program at Portland State University is accredited by the Engineering Accreditation Commission/Accreditation Board for Engineering and Technology (EAC/ABET), www.abet.org.

Program Objectives

The educational objectives of the civil engineering program are as follows:

1. Prepare graduates for all essential aspects of responsible professional practice in civil engineering. The program will:

- ◆ Provide graduates with the scientific and technical skills needed to engineer projects and to practice their profession ethically and responsibly.
 - ◆ Prepare graduates to work effectively in the professional engineering community through an understanding of concepts, techniques, and approaches that cross traditional disciplines.
 - ◆ Prepare graduates to communicate effectively with other engineers, decision-makers, and the public at large.
 - ◆ Provide graduates with an understanding of contemporary issues relevant to civil engineering in a context that includes the long-term sustainability and well-being of the community.
 - ◆ Prepare graduates to advance in the profession through professional registration and an appreciation of the need for lifelong learning.
2. Prepare graduates to enter and succeed in graduate programs of advanced professional education or research.

Admission requirements

Please refer to page 248 for admission requirements.

Degree requirements

Requirements for major. Majors in civil engineering must complete the following University and departmental degree requirements. Junior and senior engineering courses must be completed with a minimum grade of C-, and a student's cumulative PSU GPA must be 2.25 or higher to graduate from the BSCE program. Any deviation from the required courses, including engineering and mathematics course substitutions, must be approved in writing by the chair of the department.

Freshman year	Credits
EAS 101 Engineering Problem Solving.....	4
EAS 115 Engineering Graphics.....	3
Ch 221, 222 General Chemistry.....	8
Ch 227, 228 General Chemistry Laboratory.....	2
Mth 251, 252 Calculus I, II.....	8
Mth 261 Intro Linear Algebra.....	4
Freshman Inquiry.....	15
Total	44
Sophomore year	Credits
EAS 211 Statics.....	4
EAS 212 Strength of Materials.....	4
EAS 215 Dynamics.....	4
CE 211 Plane Surveying and Mapping.....	3
CE 212 Field Problems in Plane Surveying.....	1
Mth 254 Calculus IV.....	4
Mth 256 Applied Differential Equations I.....	4
Ph 221, 222, 223 General Physics (with Calculus).....	9
Ph 214, 215, 216 Physics Laboratory.....	3
Sophomore Inquiry.....	12
Total	48

Junior year	Credits
EAS 361 Fluid Mechanics.....	4
CE 315 CEE Profession Seminar.....	1
CE 321 CEE Materials.....	4
CE 324 Elementary Structural Analysis.....	4
CE 325 Indeterminate Structures.....	4
CE 341 Soil Classification and Properties.....	4
CE 351 Transportation Systems: Planning and Design.....	4
CE 362 Hydraulics.....	4
CE 364 Water Resources Engineering.....	4
CE 371 Environmental Engineering.....	4
G 301 Geology for Engineers.....	3
ME 321 Engineering Thermodynamics.....	4
Stat 451 Applied Statistics for Engineers and Scientists I.....	4
Upper-division cluster.....	4
Total	52

Senior year	Credits
CE 333 Design of Steel Structures <i>or</i> CE 434 Principles of Reinforced Concrete.....	4
CE 444 Geotechnical Design.....	4
CE 454 Urban Transportation Systems.....	4
CE 484 Civil Engineering Project Management and Design I.....	3
CE 494 Civil Engineering Project Management and Design II.....	3
† Approved civil engineering electives.....	19
CE 311 Engineering Surveys (4).....	4
CE 333 Design of Steel Structures (4).....	4
CE 420 Advanced Mechanics of Materials (4).....	4
CE 421 Analysis of Framed Structures (4).....	4
CE 423 Vibration Analysis in Structural Engineering (4).....	4
CE 431 Stability of Structures (4).....	4
CE 432 Structural Steel Design-LRFD Method (4).....	4
CE 434 Principles of Reinforced Concrete (4).....	4
CE 435 Design of Reinforced Concrete Structures (4).....	4
CE 436 Masonry Design (4).....	4
CE 437 Timber Design (4).....	4
CE 438 Design of Composite Structures (4).....	4
CE 442 In situ Behavior and Testing of Soils (4).....	4
CE 443 Introduction to Seismology and Site Evaluation (4).....	4
CE 448 Earthquake Accommodation in Design (4).....	4
CE 457 Pavement Design (4).....	4
CE 464 Hydrologic and Hydraulic Modeling (4).....	4
CE 467 Hydrologic and Hydraulic Design (4).....	4
CE 474 Unit Operations of Environmental Engineering (4).....	4
CE 477 Solid and Hazardous Waste Management (4).....	4
ME 322 Applied Fluid Mechanics and Thermodynamics (4).....	4
ME 323 Heat Transfer (4).....	4
ME 421 Heating, Ventilating, and Air Conditioning Design Fundamentals (4).....	4
ME 422 Building Energy Use Analysis and Design (4).....	4
Upper-division cluster.....	8
Total	45

Requirements for minor in environmental engineering. A student wishing to minor in this area should complete, with a minimum grade of C, and a minimum GPA of 2.25, a designated set of courses as follows:

Mth 254, 256; Ph 221, 222, 223, 214, 215, 216; Ch 221, 222, 227, 228; EAS 361; CE 362, 364, 371, 474, and a minimum of 4 credits of approved electives.

All courses must be taken for letter grade and at least one-third of the credit hours must be taken at Portland State University.

Course requirements for the minor also meet partial eligibility requirements for admission to the civil engineering program. Students who complete the requirements for the minor may wish to apply for admission to this program. Students graduating in civil engineering may not claim a minor in environmental engineering. Students planning to minor in environmental engineering should consult with an adviser in the Department of Civil and Environmental Engineering.

Honors program. The Civil Engineering honors program is intended for high-achieving undergraduate students, many of whom go on to graduate or professional school; it gives highly motivated engineering students the chance to develop undergraduate degree programs that reflect their particular interests. Working closely with an adviser in the Civil and Environmental Engineering Department, honors program students will choose an area of research interest and complete an honors thesis, usually during their senior year.

Upon acceptance into the honors program, and no later than the beginning of his/her senior year (preferably by spring quarter of the junior year), the student will declare one of the following areas of interest for his/her research topic: environmental/water resources, geotechnical, structural, or transportation. The CEE chair, in consultation with faculty, will assign the student an honors adviser. The adviser will work with the student to complete a written proposal for the honors thesis research that requires chair approval. Research will be conducted in one of the CEE specialty areas, usually during the senior year. Honors theses will follow ASCE document guidelines for style and formatting. CEE students who meet honors program requirements will graduate with honors and will receive special recognition on their diploma. Contact the department for requirements.

Graduate programs

Admission requirements

Master of Science in civil and environmental engineering. The master's program in civil and environmental engineering is designed to provide students with the technical and professional knowledge necessary to develop their abilities to seek creative solutions to complex problems in their field of interest.

† CE 401, 404, 405, 406 (4 credits maximum); CE 407, 410, and CE 507 through 599 are also accepted.

The program involves advanced courses in the areas of structural analysis and design, transportation engineering, water resources, environmental engineering, geotechnical engineering, and project management, as well as science and mathematics. Flexibility is achieved by designing programs of study to meet individual needs.

Admission requirements include a B.S./B.A. degree in an engineering field, science, or closely related area with a minimum GPA of 3.00 in all upper-division engineering courses. Courses should include calculus through differential equations, physics and chemistry, computer programming, and all the necessary prerequisites for the graduate courses that comprise the student's program of study. Applicants without all these qualifications may be considered for "conditional" or "alternate status" admission. Applicants must also meet PSU graduate admission requirements. Refer to the Department Graduate Handbook or website for more complete information.

Master of Engineering in civil and environmental engineering. The admission requirements are the same as those for the department's M.S. degree.

Master of Engineering in civil and environmental engineering management. The admission requirements include a B.S. degree in civil engineering and satisfaction of the requirements for admission to the M.S. in engineering management and M.S. in civil engineering programs.

Doctor of Philosophy in civil and environmental engineering. A student applying to the Ph.D. program in civil and environmental engineering will normally be required to have completed an M.S. degree in civil and environmental engineering or a closely related field. In addition to the University doctoral degree requirements, the program requirements include the equivalent of at least two years of full-time graduate work beyond the master's degree, a minimum of 24 hours of coursework, a comprehensive examination, prospectus defense, 27 hours of dissertation credit, and final dissertation defense. For further information on admission and degree requirements, current course schedule, and research opportunities, students should refer to the departmental Web site www.cee.pdx.edu and/or request the departmental *Graduate Handbook*.

Degree requirements

Master of Science in civil and environmental engineering. Students are required to complete tentative degree plans that have been approved by their advisers no later than the second quarter of their residence at PSU. An M.S. study

plan form for this purpose is available in the Department of Civil and Environmental Engineering. Students are also required to obtain their adviser's approval of coursework each quarter on a quarterly study plan form when there are deviations from their submitted M.S. study plan. Coursework taken without adviser approval may not be accepted as part of the student's program. University master's degree requirements are listed on page 70.

The master's program consists of two options. The first option involves a total of 45 credits, including 6 to 9 credits of thesis; the second option requires completion of a total of 45 credits, including a minimum of 41 credits of coursework and 4 credits of research project that includes a project report and a technical presentation. Student research is conducted under the supervision of faculty. In both options, coursework may include 8 credits in areas other than candidate's major emphasis, subject to the approval of student's adviser and department.

To become a candidate for the master's degree, the student must successfully complete all departmental requirements for one of the options described above. For the thesis option, successful completion of a final oral examination covering the thesis is required. Current faculty research areas include transportation systems, nonlinear structural analysis and design, earthquake engineering, mechanics of composites, stochastic modeling in hydrology and water resources, water quality and hydrodynamic modeling in environmental engineering, near-field mixing, zone modeling, groundwater contaminant transport, and in-situ soil properties in geotechnical design.

Master of Engineering in civil and environmental engineering. A total of 48 graduate credits is required. There are two M.Eng. options: coursework only requiring a minimum of 48 hours of approved coursework and the internship option in which up to 13 internship CE 504 credits can be included in the degree program.

Master of Engineering in civil and environmental engineering management. In addition to the University's general master's degree requirements, listed on page 70, the M.Eng. in civil and environmental engineering management requires a total of 48 graduate credits, including 35 course credits and a 4-credit capstone. Nine credits of internship are required, but substituting an equal number of course credits upon approval of the student's advisers may reduce the internship credits.

Doctor of Philosophy in civil and environmental engineering. A student applying to the Ph.D. program in civil and environmental engineering will normally be

required to have completed an M.S. degree in civil and environmental engineering or a closely related field. In addition to the University doctoral degree requirements, the program requirements include the equivalent of at least two years of full-time graduate work beyond the master's degree, a minimum of 24 hours of coursework, a comprehensive examination, prospectus defense, 27 hours of dissertation credit, and final dissertation defense. For further information on admission and degree requirements, current course schedule, and research opportunities, students should refer to the departmental Web site www.cee.pdx.edu and/or request the departmental *Graduate Handbook*.

Program of study. The Ph.D. program in civil and environmental engineering offers advanced courses in the areas of structural analysis and design, transportation engineering, water resources, environmental engineering, geotechnical engineering, and project management. The faculty are engaged in research related to: management of urban stormwater; surface hydrodynamic and water quality modeling including fish bioenergetics models; management of eutrophication of urban water systems; impact of habitat destruction and dams on Columbia River flows and water quality; mathematical modeling of groundwater and contaminant transport; mathematical modeling of near-field mixing of contaminants; creep response of fibrous composite materials; nonlinear behavior of composite plates; intelligent transportation systems; urban transportation; traffic flow theory; data fusion and macroscopic modeling; multi-modal traveler information; sustainability; alternative fuels; traffic management of freeways; video-imaging technologies and ITS; traffic operations using real-time traffic information; access management and traffic safety; land use and access relationships; earthquake vulnerability of buildings in urban areas; retrofit of buildings against seismic damage; and seismic testing of structures, transmission towers, sub-structures, and equipment.

Research facilities. Laboratories and computer facilities include almost 30,000 ft² (2800m²) of space in three buildings that support teaching and research. These laboratories include Seismic Testing and Applied Research (STAR), Intelligent Transportation Systems, traffic signal, surveying and mapping, transportation engineering and GIS, water quality modeling, hydrology, fluid mechanics, hydraulics, geotechnical design, insitu testing, soil mechanics, infrastructure materials, concrete, and four separate environmental engineering laboratories.

Doctor of Philosophy in systems science—civil and environmental engineering. The Ph.D. in Systems Science—civil and environmental engineering is a single-discipline option of the Systems Science Ph.D. Program (Departmental Option), whose general requirements are listed on page 75.

The departmental requirements are a master's degree in civil and environmental engineering or equivalent coursework, 9 credits of Systems Science core courses, 9 credits of additional Systems Science or approved engineering systems-related courses, and 9 credits of other approved coursework. Twenty-seven credits of dissertation research are also required. Specialization areas of research related to structural engineering, transportation engi-

neering, geotechnical engineering, environmental engineering, and water resources are available.

Doctor of Philosophy in environmental sciences and resources. The department participates in the Environmental Sciences and Resources Doctoral Program. Specialized studies in environmental and water resources engineering, along with environmental sciences courses and seminars, will partially fulfill the requirements for the Ph.D. in environmental sciences and resources. For information on the Ph.D. program in environmental sciences and resources, see page 127.

The Graduate Certificate. The Graduate Certificate in Transportation is a 21-credit program designed to build the technical

and analytical knowledge of those who are in or wish to enter the transportation field. This program could be completed in a single year on a full-time basis or over two years on a part-time basis. The certificate includes courses from the Toulan School of Urban Studies and Planning and the Department of Civil and Environmental Engineering. Credits taken as part of this certificate program may be used to satisfy partial master's degree requirements in either program. Admission to this program will require an undergraduate degree at an accredited university and a GPA that meets university admission requirements. More information about the certificate and application procedures can be found at www.cts.pdx.edu.

Computer Science

120 Fourth Avenue Building
503-725-4036
www.cs.pdx.edu/

B.S.
Minor in Computer Science
M.S.
Ph.D.

Undergraduate program

The computer science program is designed to provide students with the educational background required for a professional career in the computing industry and for further study at the graduate level. The program includes a core of required courses and an elective program of courses over a wide range of topics. Seniors work in teams to carry out projects for industry during the two-term capstone course in software engineering.

The computer science curriculum at Portland State University is accredited by the Computing Accreditation Commission/Accreditation Board for Engineering and Technology (CAC/ABET), www.abet.org. This national organization sets standards for computer science education defined in terms of curricular content, quality of faculty, and adequacy of facilities.

Program Objectives

The objectives of the undergraduate program in computer science are to produce graduates with:

- ◆ a thorough understanding of and ability to apply the core principles and practices of computing;
- ◆ the professional skills to meet the immediate needs of regional and other employers, while being able to adapt to rapidly changing technology;
- ◆ a foundation in the supporting areas of communication, science, and mathematics;
- ◆ an understanding of ethical responsibilities in the social context in which their contributions occur;
- ◆ the motivation and preparation to engage in life-long learning, including entering advanced degree programs in computer science.

Admission requirements

Please refer to page 248 for admission requirements.

Degree requirements

Requirements for major. Majors in computer science must complete the following University and departmental degree requirements. All computer science courses used to satisfy the departmental major must

be graded C or better. Courses taken outside the department as part of departmental requirements must be graded C- or better.

Transfer students majoring in computer science are required to complete a minimum of 20 credits of upper-division computer science courses in residence at PSU.

Freshman year	Credits
CS 161, 162 Introduction to Computer Science	8
CS 163 Data Structures	4
Mth 251, 252, 253 Calculus I, II, III	12
Ph 221, 222, 223 General Physics (with Calculus) ..	9
Ph 214, 215, 216 Physics Laboratory	3
Freshman Inquiry	15
Total	51

Sophomore year	Credits
CS 200 Computer Systems Programming I	4
CS 201 Computer Systems Programming II	4
CS 202 Programming Systems	4
CS 250 Discrete Structures	4
CS 251 Logical Structures	4
CS 311 Computational Structures	4
Wr 227 Technical Writing	4
Approved science electives.....	8
Sophomore Inquiry	12
Total	48

Junior year	Credits
CS 300 Elements of Software Engineering	4
CS 305 Social, Ethical, and Legal Implications of Computing.....	2
CS 321, 322 Languages and Compiler Design	8
CS 333 Operating Systems and Concurrent Programming	4
CS 350 Algorithms and Complexity	4
Stat 451 Applied Statistics for Engineers and Scientists I	4
Approved mathematics electives.....	8
Upper-division cluster.....	12
Total	46

Senior year	Credits
CS 386 Introduction to Database Systems.....	4
CS 487, 488 Software Engineering Capstone.....	6
ECE 341 Computer Architecture	4
Approved upper-division computer science electives	12
Free electives.....	9
Total	35

Note: The University requires all students to have a minimum of 72 upper-division credits to graduate. Since fewer than 72 upper-division credits are required in computer science, mathematics, and general education for the computer science major, the extra credits of upper-division work must be taken from either the approved science electives or the free electives.

Approved upper-division Computer Science electives. The total may include any regular upper-division computer science course, and any of the courses ECE 455, 456, 485, 486, except that no more than 4 credits may be taken from CS 399, 401, 405, 406, 407, 409, and CS 404 may not be used.

Approved Mathematics electives. Students must complete 8 credits of approved mathematics electives, which must include at least one upper-division course in mathematics. The current list of approved courses includes: Mth 261, Mth 343, Mth 344, Mth 346, and Stat 452. Other upper-division mathematics courses may be used to satisfy the requirement with prior written adviser approval.

Approved Science electives. The student is required to complete 8 credits of approved science electives. These must be chosen from Bi 251, 252, 253; G 201, 202; Ch 221, 222, 223; or any 300- or 400-level course from these departments or the department of physics. Laboratories taken with these courses also count toward the 8 credits.

Requirements for minor. A minor in computer science is available within the Maseeh College of Engineering and Computer Science in the area of computer science.

To earn a minor in computer science, a student must complete 36 credits as follows:

	Credits
CS 161, 162 Introduction to Computer Science	8
CS 163 Data Structures	4
CS 200 Computer Organization and Assembly Language	4
CS 201 Computer Architecture	4
CS 202 Programming Systems	4
Computer science upper-division electives except CS 404.....	12
Total	36

Only grades of C or better count toward departmental requirements. At least 16 of the required 36 credits must be taken at Portland State University.

Honors program. The honors degree in computer science requires the writing of an honors thesis (after completing course requirements for the junior year) and a minimum overall GPA of 3.50. Details about the program can be found at the computer science Web site www.cs.pdx.edu.

Biomedical informatics program.

Portland State University and Oregon Health & Science University offer an accelerated, collaborative degree program in biomedical informatics. Designed for high achieving freshmen, students in this program combine courses from both schools to receive a B.S. in computer science and Master of Biomedical Informatics at the end of five years. Qualified transfer students may also enter the program. Details about the program can be found at the computer science Web site www.cs.pdx.edu.

Graduate programs

The Department of Computer Science offers M.S. and Ph.D. degrees, with graduate-level work in the areas of database, programming languages, software engineering, systems and networks, theory, and security. Flexibility is achieved by designing programs of study to meet individual needs.

The departmental Web site (www.cs.pdx.edu) provides full details on the departmental regulations for these programs.

Admissions requirements

To be considered for admission to the graduate program in computer science, the student must have a four-year baccalaureate degree from an accredited institution. This degree should normally be in computer science; otherwise, the applicant must demonstrate knowledge of the core curriculum of an undergraduate computer science degree.

An undergraduate GPA of at least 3.00 in upper-division coursework is required. Applicants must take the general portion of the Graduate Record Examination, and submit two letters of recommendation and a statement of purpose to the department.

Normally, an applicant to the Ph.D. program will have an M.S. in computer science. Students may apply to the M.S. program and later apply to the Ph.D. program.

Degree requirements

Master of Science in computer science.

The master's program in computer science is designed to prepare students for advanced careers in the computer industry, to create a research environment in computer science, and to prepare students for graduate work at the Ph.D. level.

University master's degree requirements are listed on page 70. The master's program in computer science consists of two options. The first option involves the completion of an approved program of 45 credits. The second option requires the completion of an approved program of 45 credits, which includes 6 to 9 credits of thesis. In both options, coursework is to include core courses in theory, programming languages, and operating systems, plus a 9-credit operating concentration in one of the areas listed on the computer science departmental web site. For the thesis option, successful completion of a final oral examination covering the thesis is required.

Doctor of Philosophy in computer science. The doctoral degree program in computer science is designed to prepare students for advanced research or university teaching in the field.

University doctoral degree requirements are listed on page 72. The student must complete an approved program of 90 graduate credits, including 18 credits of core courses and 27 credits of dissertation research. To be admitted to Ph.D. candidacy, a student must pass the Ph.D. examination and must present an acceptable dissertation proposal. The dissertation comprises original research work, which is expected to be of a quality meriting publication in a refereed journal or conferences.

Electrical and Computer Engineering

1900 SW Fourth Ave., Suite 160
503-725-3806
www.ece.pdx.edu/

B.S.
Minor in Electrical Engineering
M.S.
M.Eng.
Ph.D.

Undergraduate programs

The Department of Electrical and Computer Engineering offers programs in electrical and computer engineering. Qualified freshmen are encouraged to participate in the University Honors Program described on page 59. Qualified upper-division students should consider the Electrical and Computer Engineering Honors Program; details are available from the department.

The electrical engineering and computer engineering programs at Portland State University are accredited by the Engineering Accreditation Commission/Accreditation Board for Engineering and Technology (EAC/ABET), www.abet.org.

Program Objectives

The electrical and computer engineering programs have the following educational objectives:

- ◆ **Knowledge:** To provide our students with a broad knowledge base in the fundamentals and techniques of the engineering sciences, required for engineering careers in a changing technical environment, to prepare them for successful participation in multi-disciplinary teams.
- ◆ **Application:** To provide our students with an in-depth knowledge of the concepts, techniques and tools of the electrical and computer engineering disciplines and impart the ability to apply their proficiency to engineering design and problem solving.
- ◆ **Innovation:** To provide our students with the ability and desire to continually renew their education in a rapidly developing discipline, enabling them to participate in the research and develop-

ment of the discipline and to realize their full potential throughout their career.

- ◆ **Community:** To ensure awareness of (a) the need for personal development, both in discipline related aspects and in terms of understanding the impact of the profession on social and environmental issues and (b) the importance and benefits of personal involvement in professional societies and local communities.

Admission requirements

Please refer to page 248 for admission requirements.

Degree requirements

Electrical and Computer Engineering General Education requirements. The MCECS General Education requirements for engineering students can be met in one of the following ways:

1. Students who complete their entire program at Portland State University meet the requirement by taking 39 credits of University Studies. (15 credits Freshmen Inquiry, 12 credits Sophomore Inquiry, and 12 credits Upper-division Cluster).
2. Transfer students meet the requirement by having Wr 121, Sp 100, and 33 credits as a combination of University Studies courses and liberal arts/social science transfer credits. (At a minimum the 12 credit junior/senior cluster must be taken at PSU).
3. Courses specifically required in a program must be taken on a graded basis unless those classes are only available with a pass/no-pass grading option. Classes not specifically identified by a unique number, for example an upper-division cluster class, may be taken on a P/NP basis.

GPA requirements. In order to graduate, electrical and computer engineering students must have overall GPA, which includes all courses taken at PSU, larger than 2.00. Their major GPA must also be larger than 2.00. Major GPA includes all of the engineering courses used toward satisfying the degree requirements, whether taken at PSU or transferred. Normal PSU policies apply for grade replacement in

major GPA calculation. If at any point either of these GPAs falls below 2.00 students will be placed on probation, as explained in MCECS Continuation Criteria.

Requirements for major in electrical engineering. The electrical engineering program is designed to provide a comprehensive background in the electrical sciences and offers an opportunity for specialization in the areas of physical electronics, circuit design, electrical power engineering, automatic control systems, communication systems, computer engineering, signal processing, and electromagnetics. This program provides the student with the educational background necessary for employment in virtually all electrical engineering fields.

Majors in electrical engineering must complete the following University and departmental degree requirements. Any deviation from the required courses must be approved by the department.

Freshman year	Credits
ECE 171 Digital Circuits	4
EAS 101 Engineering Problem Solving	4
EAS 102 Engineering Computation Structures or CS 161 Introduction to Computer Science I	4
Mth 251, 252, 253 Calculus I, II, III	12
Ph 221, 222, 223 General Physics (with Calculus)	9
Ph 214, 215, 216 Physics Laboratory	3
Freshman Inquiry	15
Total	51

Sophomore year	Credits
ECE 201, 202, 203 Electrical Engineering Laboratory I, II, III	3
ECE 221 Electric Circuits	4
ECE 222 Signals and Systems I	4
ECE 223 Signals and Systems II	4
ECE 271 Digital Systems	5
Ch 221 General Chemistry	4
Ch 227 General Chemistry Laboratory	1
Mth 254 Calculus IV	4
Mth 256 Applied Differential Equations I	4
Mth 261 Introduction to Linear Algebra	4
Sophomore Inquiry	12
Total	49

Junior year	Credits
ECE 311 Feedback and Control	5
ECE 321, 322, 323 Electronics I, II, III	12
ECE 331 Engineering Electromagnetic I	4
ECE 332 Engineering Electromagnetic II	5
ECE 301, 302, 303 Electrical Engineering Laboratory IV, V, VI	3
Stat 451 Applied Statistics for Engineers and Scientists I	4
Ph 319 Solid State Physics for Engineering Students	4
Approved junior electrical engineering electives	8

Approved electives for two junior electrical engineering electives include: ME 321 Engineering Thermodynamics, ECE 371 Microprocessors, ECE 372 Microprocessor Interfacing and Embedded Systems, ECE 351 Hardware Description Languages and Prototyping

Total 45

Senior year	Credits
ECE 411, 412, 413.....	8
Approved electrical engineering electives.....	20
Wr 227 Technical Writing.....	4
Upper-division cluster.....	12
†Ec 314 Private and Public Investment.....	4
Total	44

‡Approved electrical engineering electives

The student is required to complete at least 20 senior elective credits, including at least one sequence. Any 400-level electrical engineering course may be used, excluding the following omnibus numbered courses: ECE 401, 405, 407. ECE 403 Honors thesis may be used by students in the electrical engineering honors program.

Requirements for minor in electrical engineering. A minor program is available within the Maseeh College of Engineering and Computer Science in the area of electrical engineering. A student wishing to minor in this area should complete, with a minimum grade of C, and a minimum GPA of 2.25, a designated set of courses as follows:

EAS 101, 102, ECE 171, 201, 202, 203, 221, 222, 223, 271 or approved equivalents.

At least four of the courses selected from EAS 101, 102, ECE 171, 221, 222, 223, 271 must be taken at Portland State University.

Course requirements for the minor also meet partial eligibility requirements for admission to the electrical engineering and computer engineering programs. Students who complete the requirements for the minor may wish to apply for admission to one of these programs. Students graduating in computer engineering may not claim a minor in electrical engineering. Students planning to minor in electrical engineering should consult with an adviser in the Department of Electrical and Computer Engineering.

Requirements for major in computer engineering. The computer engineering program is designed to provide a comprehensive background in computer engineering and offers an opportunity for specialization in the areas of digital electronics, VLSI circuit design and computer aided design, robotics, computer architecture, communication systems, and embedded microprocessor system design. This program provides the student with the educational background necessary for employment in virtually all branches of the digital electronics and computer industry.

Majors in computer engineering must complete the following University and departmental degree requirements. Any deviation from the required courses must be approved by the department.

† Ec 314 is a required course that can be taken as a part of some upper-division clusters.

‡ Departmental approval is required to substitute other engineering electives.

§ Admission to the Department of Electrical and Computer Engineering Honors Program is required. ECE 411, 412, 413 and ECE 403 are combined to form a 12-credit honors project.

Freshman year	Credits
ECE 171 Digital Circuits.....	4
EAS 101 Engineering Problem Solving.....	4
CS 161 Introduction to Computer Science I or EAS 102 Engineering Computation Structures.....	4
Mth 251, 252, 253 Calculus I, II, III.....	12
Ph 221, 222, 223 General Physics (with Calculus).....	9
Ph 214, 215, 216 Physics Laboratory.....	3
Freshman Inquiry.....	15
Total	51

Sophomore year	Credits
ECE 201, 202, 203 Electrical Engineering Laboratory I, II, III.....	3
ECE 221 Electric Circuits.....	4
ECE 222 Signals and Systems I.....	4
ECE 223 Signals and Systems II.....	4
ECE 271 Digital Systems.....	5
CS 162 Introduction to Computer Science II.....	4
CS 163 Data Structures.....	4
Ch 221 General Chemistry.....	4
Ch 227 General Chemistry Laboratory.....	1
Mth 256 Applied Differential Equations I.....	4
Mth 261 Introduction to Linear Algebra.....	4
Sophomore Inquiry.....	12
Total	53

Junior year	Credits
ECE 301, 302, 303 Electrical Engineering Laboratory IV, V, VI.....	3
ECE 321, 322, 323 Electronics I, II, III.....	12
ECE 351 Hardware Design Languages and Prototyping.....	4
ECE 371 Microprocessors.....	4
ECE 372 Microprocessor Interfacing and Embedded Systems.....	5
CS 202 Programming Systems.....	4
Stat 451 Applied Statistics for Engineers and Scientists I.....	4
Ph 319 Solid State Physics for Engineering Students.....	4
Wr 227 Technical Writing.....	4
Total	44

Senior year	Credits
ECE 411, 412, 413.....	8
ECE 485 Microprocessor System Design.....	4
CS 333 Operating Systems and Concurrent Programming.....	4
Approved electrical engineering electives.....	8
CS 340 Discrete Structures for Engineers.....	4
Approved upper-division computer science elective.....	4
Upper-division cluster.....	12
†Ec 314 Private and Public Investment.....	4
Total	44

Approved electrical engineering electives

The student is required to complete at least 8 senior elective credits, including at least one sequence. Any 400-level electrical engineering course may be used excluding the following omnibus numbered courses: ECE 401, 405, 407. ECE 403[§] Honors Thesis may be used by the students in computer engineering honors program.

Honors program. The Electrical and Computer Engineering Honors Program permits highly motivated, qualified students to pursue a subject in the field of electrical or computer engineering in greater depth than is normally possible within the undergraduate ECE program. Students successfully completing the ECE honors graduation requirements will have the words "Distinguished Graduate" printed on their diploma.

Selection Criteria

1. Completion of courses required for admission to the Electrical and Computer Engineering Program.
2. Minimum overall GPA of 3.20; minimum GPA of 3.50 in upper-division ECE courses taken at PSU.

Application Procedure

Students should apply for admission during the spring quarter of the junior year. Along with the application form, students should submit the following:

1. Official transcripts of all university work.
2. Letters of reference from at least two ECE faculty.
3. Statement of interest (not to exceed one page) indicating reasons for wanting admission to the honors program.

Graduate programs

The ECE Department offers M.Eng., M.S., and Ph.D. degrees in a variety of electrical and computer engineering technical areas. Programs are available on both a full-time and part-time basis. Many classes are offered in the late afternoons and early evenings.

Please refer to the departmental *ECE Graduate Handbook* for detailed program information.

Admission requirements

Master of Engineering in electrical and computer engineering. Applicants with a B.S. degree in either electrical or computer engineering and a grade point average of 3.00 or better in all junior- and senior-level technical courses may be considered for admission to the Department of Electrical and Computer Engineering as regular graduate students. Applicants with a B.S. degree in a related field (e.g. mathematics, physics, computer science, or mechanical engineering) or a B.S. in either electrical or computer engineering and a grade point average in their upper division technical coursework below 3.00 but higher than 2.75 may be granted qualified admission status.

Master of Science in electrical and computer engineering. The admission requirements are identical to the ECE Department's M.Eng. program. However, applicants with a non-ABET accredited degree must submit official GRE scores. GRE scores must be no older than two years at time of application.

Doctor of Philosophy in electrical and computer engineering. Applicants to the Ph.D. program in electrical and computer engineering will have completed a master's degree in electrical engineering or a related field and must submit official GRE Scores. GRE scores must be no older than two years at time of application.

Graduate Certificate in a specific area of electrical and computer engineering. Admission requirements are identical to the ECE department's M.Eng. program.

Degree requirements

Master of Engineering in electrical and computer engineering. In addition to the University master's degree requirements listed on page 70, a candidate for the M.Eng. degree must complete at least 45 graduate-level credits. Credits must be distributed as follows: 3 credits ECE 507 Seminar, 32 credits of ECE graduate courses numbered between 511 and 599 (including at least one course sequence), and 10 credits of elective coursework. A thesis is neither required nor applicable to the M.Eng. program. Please refer to the

ECE Graduate Handbook for detailed degree requirements.

Master of Science in electrical and computer engineering. In addition to the University master's degree requirements listed on page 70, a candidate for the M.S. degree in electrical and computer engineering must complete at least 45 graduate-level credits. Credits must be distributed as follows: 3 credits ECE 507 Seminar; 24 credits of ECE graduate courses numbered between 511 and 599 (including at least one course sequence), 12 credits of elective coursework, and at least 6 credits and no more than 9 credits thesis. A final oral exam covering the thesis is required. Please refer to the *ECE Graduate Handbook* for detailed program requirements.

Doctor of Philosophy in electrical and computer engineering. In addition to the University doctoral degree requirements listed on page 72, a candidate for the Ph.D. degree in electrical and computer engineering must complete a minimum of 45 graduate credits in electrical and computer engineering and at least 9 graduate credits in a minor department outside the Department

of Electrical and Computer Engineering. Please refer to the *ECE Graduate Handbook* for detailed program requirements. Briefly, each Ph.D. student is required to present at least one departmental seminar. The comprehensive exam must be passed within 18 months after admission. The dissertation proposal must be approved 24 months after passing the comprehensive exam. Prior to graduation, a Ph.D. student is required to have some phase of their doctoral research published or accepted for publication in a journal approved by a majority of the dissertation committee. A majority of the dissertation committee can require more than one such publication.

Graduate Certificate in electrical and computer engineering. In addition to the University graduate certificate requirements listed on page 69, a student must meet the program requirements for the specific certificate. The total number of graduate level credits in a student's program must be at least 15 credits, and some ECE certificates may require more than 15 credits or have additional requirements. Please refer to the *ECE Graduate Certificate Handbook* for detailed program requirements.

Engineering and Technology Management

LL Suite 50, Fourth Avenue Building
503-725-4660
www.etm.pdx.edu/

M.S.

M. Eng.

Ph.D.—Participating department in Systems Science Doctoral Program

Strong management skills are increasingly important to technical professionals. Managing R&D projects, technological systems, technical organizations and resources, and other professionals requires management knowledge and skills.

Engineers and scientists are faced with these challenges very early in their careers. Typically within three to seven years after graduation, they find themselves addressing complex issues which necessitate that they play two roles simultaneously: the role of the specialist and the manager of technology. Those who choose the management path start moving toward management responsibilities while maintaining identity in their technical backgrounds.

The Engineering and Technology Management Department (ETM) has been designed for them.

ETM is a graduate department addressed to the needs of engineers and scientists whose objective is to advance to technical management positions in business, industry, or government. It also addresses the needs of those who are interested in continuing their studies toward a research-based career in engineering/technology management in academic institutions or R&D organizations.

ETM draws on the strengths of the Maseeh College of Engineering and Computer Science, the School of Business Administration, and several other relevant academic disciplines. By utilizing the diverse faculty resources of the University, the program offers the opportunity to study the human, technical, and analytical aspects of management.

Most of the courses in the program are

offered during the late afternoon and evening hours to fit the schedule of practicing professionals.

Admission requirements

Master of Science in engineering management, Master of Engineering in technology management, and Master of Engineering in project management. In addition to meeting general University admission requirements listed on page 45, applicants to the program are required to have a baccalaureate degree in engineering or related discipline, background in probability/statistics, and four years of professional experience. Admission is granted to applicants who are judged to have a higher potential as reflected by their past academic performance and professional experience. Any variation from these requirements must be approved by the ETM department.

Master of Engineering in civil and environmental engineering management.

The admission requirements include a B.S. degree in civil engineering and satisfaction of the requirements for admission to the M.S. in engineering management and the M.S. in civil engineering.

Degree requirements

Master of Science in engineering management. A minimum of 52 credits in approved graduate courses is required to complete the Master of Science degree in engineering management. The program consists of 28 credits in the core, 4 credits (or 8 with thesis option) in the capstone requirement, and 20 credits (or 16 with thesis option) in electives.

Core courses	Credits
EMgt 520 Management of Engineering and Technology	4
EMgt 530 Decision Making in Engineering and Technology Management	4
EMgt 540 Operations Research in Engineering and Technology Management	4
EMgt 545 Project Management in Engineering	4
EMgt 555 Technology Marketing	4
One of the following two courses:	4
EMgt 522 Communication and Team Building (4)	
Mgmt 550 Organizational Management (4)	
One of the following two courses:	4
Actg 511 Financial Accounting (4)	
EMgt 535 Engineering Economic Analysis (4)	

Capstone requirement (one of the following; 4 or 8 credits):

EMgt 503 M.S. Thesis	8
EMgt 589 Capstone Project	4
EMgt 590 Engineering Management Synthesis	4

Electives (20 credits or 16 credits with the thesis option)

The Engineering and Technology Management Department offers a wide range of elective courses. In addition, students may choose electives in several other programs throughout the University with the approval of their adviser.

Master of Engineering in engineering management. The Master of Engineering programs are open to full-time employees or interns working in industry while pursuing their studies in the ETM. There are three options for the M.Eng. in engineering management.

The technology management option prepares engineers, scientists, and individuals with related backgrounds, working in technology-based positions for leadership in selecting, exploring, developing, and utilizing technology within the corporate strategies.

The project management option provides a focused coverage of the analytical framework, organization concepts, and interpersonal skills necessary for managing projects and programs.

The civil and environmental engineering management option allows for engineering management specialization in civil engineering, including the subdisciplines of civil engineering such as construction, transportation, water resources, structures, and environmental engineering. The students in the Civil Engineering Management option are assigned two advisers: one from the Engineering and Technology Management Department and one from the Civil and Environmental Engineering Department.

Master of Engineering in technology management. A total of 45 graduate credits are required which includes 24 credits of core courses and a minimum of 8 credits of elective courses approved by the adviser. All students must complete an applied 4-credit capstone requirement which may be based in part upon work or internship experiences. Nine credits of internship are required but this may be reduced by substituting an equal number of elective credits upon approval of the student's adviser. Course credits may include transfer credits and graduate courses taken in other, allied disciplines.

Master of Engineering in project management. A total of 45 graduate credits are required which includes 24 credits of core courses and a minimum of 8 credits of elective courses approved by the adviser. All students must complete an applied 4-credit capstone requirement which may be based in part upon work or internship experiences. Nine credits of internship are

required but this may be reduced by substituting an equal number of elective credits upon approval of the student's adviser. Course credits may include transfer credits and graduate courses taken in other, allied disciplines.

Master of Engineering in civil and environmental engineering management. In addition to meeting the University's general requirements for master's degrees listed on page 70 of the *Bulletin*, the M.Eng. in civil engineering management requires a total of 45 graduate credits, including 32 course credits and a 4-credit capstone. Nine credits of internship are required but substituting an equal number of course credits upon approval of the student's advisers may reduce the internship credits.

Doctor of Philosophy in systems science—engineering management. The Ph.D. in systems science—engineering management is a single-discipline option of the Systems Science Ph.D. Program (Departmental Option). The general requirements are listed on page xx.

The program requirements are a master's degree in engineering management or equivalent coursework, 9 credits of Systems Science core courses, 9 credits of additional Systems Science or approved engineering management systems-related courses, and 9 credits of other approved coursework. Twenty-seven credits of dissertation research are also required. Specialization areas of research related to technology management, decision theory, operations research, project management, manufacturing management, technological innovations, technology planning, and knowledge-based systems in engineering management are available.

† Also offered as Mktg 555.

Mechanical and Materials Engineering

Suite 400, Engineering Building
503-725-4290
www.me.pdx.edu/

B.S.
M.S.
M.Eng.
Ph.D.—Participating department in Systems Science Doctoral Program

Undergraduate programs

Mechanical engineering affords a wide range of career paths with a broad spectrum of employers. Careers are available in aerospace, energy conversion, energy utilization, environmental design and management, chemical processing, electromechanical systems, controls, mechanical design, manufacturing, and materials, to name a few. Employment may be found in virtually every kind of industry, every branch of government, and every kind of utility. The mechanical engineering curriculum at Portland State University is distinguished by its computer applications at all levels and emphasis on the design process. The curriculum allows specialization in fluid systems, mechanical systems, thermal systems, and machine design with emphases in materials, electronic packaging, and advanced computational design methods. It affords an education suited to meeting the technology needs of the Northwest.

The mechanical engineering curriculum is accredited by the Engineering Accreditation Commission/Accreditation Board for Engineering and Technology (EAC/ABET), www.abet.org. This national organization sets standards for engineering education defined in terms of curricular content, quality of faculty, and adequacy of facilities.

The mechanical engineering department is engaged in a continuous program improvement process in which the educational needs of our students have the utmost importance. The goal of the department is to ensure that all of our graduates receive a balanced education that make them highly desirable to employers.

Program Objectives

The educational objectives of the program are to prepare engineers who have:

- ◆ The ability to practice the profession of mechanical engineering effectively and responsibly.
- ◆ The ability to integrate into the professional community and advance in their careers.
- ◆ The ability to pursue advanced degrees and engage in engineering research.

Admission requirements

Please refer to page 248 for admission requirements.

Degree requirements

Majors in mechanical engineering must complete the following University and departmental degree requirements. Any deviation from the required courses, including engineering and mathematics course substitutions, must be approved in writing by the chair of the Department of Mechanical Engineering.

Freshman year	Credits
EAS 101 Engineering Problem Solving	4
EAS 115 Engineering Graphics	3
Ch 221, 222 General Chemistry	8
Ch 227, 228 General Chemistry Laboratory	2
Mth 251, 252 Calculus I, II	8
Mth 261 Linear Algebra	4
Freshman Inquiry	15
Total	44

Sophomore year	Credits
EAS 211 Statics	4
EAS 212 Strength of Materials	4
EAS 213 Properties of Materials	4
EAS 215 Dynamics	4
ME 241 Manufacturing Processes	4
ECE 201 Electrical Engineering Laboratory	1
ECE 221 Electric Circuits	4
Mth 254 Calculus IV	4
Mth 256 Applied Differential Equations I	4
Ph 221, 222, 223 General Physics (with Calculus)	9
Ph 214, 215, 216 Physics Laboratory	3
Sophomore Inquiry	12
Total	57

Junior year	Credit
EAS 361 Fluid Mechanics	4
ME 313 Analysis of Mechanical Components	4
ME 314 Analysis and Design of Machine Elements	4
ME 321 Engineering Thermodynamics	4
ME 322 Applied Fluid Mechanics and Thermodynamics	4
ME 323 Heat Transfer	4
ME 351 Vibrations and System Dynamics	4
ME 352 Numerical Methods in Engineering	4
Stat 451 Applied Statistics for Engineers and Scientists I	4
Ph 381 Physical Metallurgy for Engineers	3

Wr 327 Technical Report Writing	4
Upper-division cluster	8
Total	51

Senior year	Credits
ME 411 Engineering Measurement and Instrumentation Systems	4
ME 420 or ME 437 Systems Design	4
ME 488 Design of Experiments	2
ME 491 Design Process	2
ME 492 Conceptual Design Project	4
ME 493 Detailed Design Project	4
Approved mechanical engineering electives	16
Upper-division cluster	4
Total	40

Honors Program

Entry Requirements

- Admission to the Mechanical Engineering Program
- Minimum overall GPA of 3.50
- Minimum GPA of 3.40 in upper-division engineering courses (16 credits minimum)
- Submission of an application to the Mechanical Engineering Honors Program

Each student participating in the Mechanical Engineering Honors Program will be assigned an honors adviser. The adviser will work with the student to complete a written proposal for the Honors Thesis research, to be conducted in a specialty area within mechanical engineering. The completed Honors Thesis research will be presented to Mechanical Engineering faculty and students in a seminar. The Honors Thesis, ME 403, may qualify as an approved mechanical engineering elective.

Graduate programs

Master of Science in mechanical engineering. The master's program in mechanical engineering gives the practicing engineer advanced professional opportunities and the student considering a career of research or university teaching a first level of graduate study. The program includes a core of required mechanical engineering courses, advanced mathematics courses, a selection of engineering electives, and supervised individual research.

Master of Engineering in mechanical engineering. The Master of Engineering in Mechanical Engineering degree is a practice-based, professional degree designed for students seeking to advance their knowledge and skills of engineering applications. The opportunity for participation in industrial internships highlights the curriculum.

Master of Science in materials science and engineering. The Master of Science in materials science and engineering degree recognizes advanced coursework and research that blends basic materials science with fundamental engineering principles and practice. Closely tied to industry needs and applications, the program supports research in metallurgy, semiconductor materials, composites, welding and joining, photovoltaic manufacturing, and material testing. Current faculty research includes high strength alloys, electrosag welding technology, acoustic emission methods, modeling of molding and casting, chemical-mechanical planarization, and heat treatment.

Admission requirements

Master of Science in mechanical engineering. Applicants who have received a B.S. degree in mechanical engineering or closely related field from an accredited university, and meet university graduate admission requirements found on page 62, will be considered for admission to the Mechanical Engineering Department for regular admission. Conditional admission may be granted in exceptional cases.

Master of Engineering in mechanical engineering. Admission requirements for the M.Eng. degree are identical to those for the M.S. degree, as included in the Graduate School Admissions portion of this catalog. Degree requirements include 45 graduate credits, which include 32 credits of core requirements and electives (see M.S. degree requirements for core requirements). Up to 6 credits of approved industrial experience can be toward the degree. Approved industrial projects can also be integrated into the curriculum. Specific requirements are detailed in the *Mechanical Engineering Graduate Bulletin*.

Master of Science in materials science and engineering. For regular admission consideration, applicants should meet University graduate admission requirements found on page 62 and have received a B.S. degree in engineering or a related science field such as materials science, physics, or chemistry. Conditional admission may be granted in exceptional cases.

Degree requirements

Master of Science in mechanical engineering. University master's degree requirements are listed on page 70. In addition, a candidate for the M.S. degree must complete at least 27 credits in engineering, excluding thesis or project.

The master's degree may be completed with any one of three options. One research option requires 36 credits of coursework and 9 credits of thesis (ME 503). Another option requires 36-39 credits of coursework and 6-9 credits of research project (ME 501). Under these options, student research is conducted under the supervision of faculty, and a final oral examination covering the thesis or project must be successfully completed. The third option requires 45 credits of coursework, with no final oral exam required. Coursework may include special projects, but a maximum of 12 credits total of 501, 503, 505, and 506 may be applied toward any option.

Required core courses include ME 511, 551, and 4 credits each of approved graduate math and numerical methods. In addition, for the project/thesis options, ME 507 (one credit) and ME 501 or 503 must be taken. All students must submit a study plan approved by their adviser before the beginning of their third term with additional plans submitted at the request of their adviser.

The department supports research in manufacturing, materials science, electronic packaging, and engineering science. Current faculty research areas include energy systems, electronic cooling, dynamic systems modeling, computational mechanics, thermo-fluid systems, materials, and FEM applications in mechanical design.

Master of Science in materials science and engineering. In addition to meeting all University requirements for the M.S. degree found on page 70, the candidate must satisfy the following departmental requirements: (1) 45 graduate credits; (2) Core requirements of ME 513 or MSE 513 (depending on student background), MSE 547, MSE 515, MSE 525, and MSE 507; (3) A set of specialty courses approved by the Student Program Committee; (4) Research yielding 6-9 credits; (5) Passage of the final oral examination. The student will be able to choose between a thesis option and a project option for the research component.

Each student will be assigned an adviser upon acceptance to the program, and the adviser will be the primary contact for the student in the department. The Student Program Committee, a group of three fac-

ulty members, will meet with each student twice per year to review the course of study that the student and adviser have chosen and to monitor overall program quality.

Doctor in Philosophy in systems science—mechanical engineering. The Ph.D. in systems science—mechanical engineering is a single-discipline option of the Systems Science Ph.D. Program (Departmental Option), whose general requirements are listed on page 74.

The departmental requirements are a master's degree in mechanical engineering or equivalent coursework, 9 credits of Systems Science core courses, 9 credits of additional Systems Science or approved engineering systems-related courses, and 9 credits of other approved coursework. Twenty-seven credits of dissertation research are also required. Specialization areas of research related to building energy conservation, CAD, controls, heat transfer, microprocessor applications, computational fluid dynamics, transport processes, thermochemical conversions, and advanced manufacturing.

Courses

Courses with an asterisk () are not offered every year.*

EAS 101 Engineering Problem Solving (4)

Introduction to basic ideas and tools used in the engineering profession. Basic preparation in rudiments and working methods of engineering design, analysis, and problem solving, with emphasis on developing skills in computer-aided problem solving methods utilizing tools such as MATLAB, Mathcad, and EXCEL. Introduction to structured computer programming methods via MATLAB scripting language. Lecture and recitation. Prerequisite: Mth 112.

EAS 102 Engineering Computation Structures (4)

Introduction to advanced data structures useful for solving engineering problems. Continues developing skills in the algorithmic method for engineering problem solving. Modern programming language. Prerequisite: EAS 101.

EAS 115 Engineering Graphics (3)

The graphic language applied to engineering. Projection systems. Multiview and pictorial representation. Introduction to computer graphics. Lecture and laboratory.

EAS 199 Special Studies (Credit to be arranged.)

Consent of instructor.

EAS 211 Statics (4)

Principles and applications of static equilibrium to structures and machines. Prerequisite: Mth 252 or Mth 261, Ph 221 taken concurrently.

EAS 212 Strength of Materials (4)

Study of the relationship between strain and stress in deformable bodies; principles of stress

analysis for axial force, flexure, torsion, and shear; studies in combined stresses and column stability. Prerequisites: EAS 211, Mth 261.

EAS 213

Properties of Materials (4)

Basic properties, behavior, and survey of engineering and industrial applications of materials. Prerequisite: Ch 221. Lecture and laboratory.

EAS 215

Dynamics (4)

Fundamental principles and methods of Newtonian mechanics including kinematics and kinetics of motion and the conservation laws of mechanics. Basic particle and rigid body applications. Prerequisites: EAS 211, Mth 261.

EAS 361

Fluid Mechanics (4)

Properties of fluid; fluid statics; differential analysis; conservation of mass, energy, and momentum; dimensional analysis; and fluid metering. Prerequisites: EAS 215, Mth 256 taken concurrently. Lecture and laboratory.

EAS 401

Research (Credit to be arranged.)

Consent of instructor.

EAS 405

Reading and Conference (Credit to be arranged.)

Consent of instructor.

EAS 406

Special Projects (Credit to be arranged.)

Consent of instructor.

EAS 407

Seminar (Credit to be arranged.)

Consent of instructor.

EAS 410

Selected Topics (Credit to be arranged.)

Consent of instructor.

***EAS 461/561**

Reliability Engineering (4)

Design of reliable components and systems for electrical and mechanical engineering fields. Includes elements of probability and statistics, reliability, mathematics, failure modes and effect analysis; and design for given reliabilities under constraints. Prerequisite: senior standing in engineering.

Civil Engineering

CE 199

Special Studies (Credit to be arranged.)

Consent of instructor.

CE 211

Plane Surveying and Mapping (3)

An introductory analytical treatment of the principles of engineering measurements applied to plane surveys. Origin of datums, random error, observation systems, computations, nonrigorous adjustments, and topographic mapping. Computer applications. Prerequisite: Mth 251.

CE 212, 213, 214

Field Problems in Plane Surveying (1, 1, 1)

CE 212: Care and operation of plane survey instruments. Field projects in testing instrumental adjustment and executing basic survey circuits. CE 213: Development and completion of a topographic map by field method. CE 214: Layout of a route design; adjustment of optical instruments. Elementary field astronomy. Prerequisite: CE 211 concurrently.

CE 311

Engineering Surveys (4)

The principles of geometric design of route engineering. The reconnaissance, design, control, and layout of highway and railroad systems including curves and earthwork. Municipal surveys and introduction to spherical astronomy. Computer applications. Prerequisite: CE 211.

CE 315

The Civil and Environmental Engineering Profession (1)

Introduction to civil and environmental engineering (CEE) practice in structural, environmental, geotechnical, and transportation engineering. Overview of education, training, research, and employment opportunities for each area of CEE. Engineering registration and ethics. Prerequisite: junior standing in CEE.

CE 321

CEE Properties of Materials (4)

Introduction to structure and properties of civil engineering materials such as steel, asphalt, cement, concrete, soil, wood and polymers. Laboratory tests include evaluation of behavior of these materials under a wide range of conditions. Lectures and laboratory. Prerequisite: EAS 212.

CE 324

Elementary Structural Analysis (4)

Loads on structures as dictated in various codes and specification; load flow through a structural system and tributary areas; methods of analysis of statistically determinate planar trusses, beams, and frames; concepts of stability and indeterminacy; axial, shear, and bending moment; calculations of displacements and rotations by virtual work, Castigliano's theorem for trusses, beams and frames; computer analysis of structures using an existing commercial program. Prerequisites: EAS 212 and Mth 254.

CE 325

Indeterminate Structures (4)

Analysis of indeterminate structures by force and displacement methods; consistent deformations and the theorem of least work; slope deflection; moment distribution including sway; approximate methods. Prerequisite: CE 324.

CE 333

Design of Steel Structures (4)

Design of tension members, columns, beams, beam-columns, and connections based on allowable stress design. Prerequisites: CE 321, CE 325.

CE 341

Soil Classification and Properties (4)

Determination and interpretation of significant engineering properties and behavior of soils; selected application in mechanics of foundations and earth structures. Three lectures; one 3-hour laboratory period. Prerequisite: CE 321.

CE 351

Transportation Systems: Planning and Design (4)

A study of engineering problems associated with the planning and design of urban and intercity transportation with emphasis on systems approach to problems definition and solution. Vehicle operation characteristics and traffic control devices for land, air, and water, data collection methods and development of transportation models for the establishment of design criteria for transportation structures. Prerequisite: junior standing in engineering.

CE 362

Hydraulics (4)

Laminar and turbulent flow and introduction to boundary layer theory; flow in pressurized closed conduits including simple and multiple pipe systems, uniform and non-uniform flow in open channels, behavior of centrifugal pumps, and analysis of pump-pipeline systems. Three hours of lecture and one 3-hour laboratory period each week. Prerequisite: EAS 361.

CE 364

Water Resources Engineering (4)

Principles of hydrology and hydraulic engineering applied to water supply systems design. Collection and distribution, pump stations, water quality and treatment, economic considerations. Prerequisite: CE 362.

CE 371

Environmental Engineering (4)

Effect of air, land, and water pollutants on environment. Transport and fate of pollutants in environment. Flow and mass balances of reactors. Reaction kinetics. Mathematical modeling of water quality in rivers, lakes, and estuaries. Water and wastewater treatment processes. Air quality management. Solid waste management. Prerequisite: EAS 361.

CE 401

Research (Credit to be arranged.)

Consent of instructor.

CE 403

Honors Thesis (Credit to be arranged.)

Consent of instructor.

CE 404

Cooperative Education/Internship (Credit to be arranged.)

Consent of instructor.

CE 405

Reading and Conference (Credit to be arranged.)

Consent of instructor.

CE 406

Special Projects (Credit to be arranged.)

Consent of instructor.

CE 407

Seminar (Credit to be arranged.)

Consent of instructor.

CE 410

Selected Topics (Credit to be arranged.)

Consent of instructor.

***CE 420/520**

Advanced Mechanics of Materials (4)

Advanced studies in mechanics of materials including fundamentals of elasticity, phenomenological material behavior, and theories of failure. Timoshenko beam theory, stress functions, shear stresses, unsymmetrical sections, and beams on elastic foundations. Thick-walled cylinders; approximate methods. Prerequisites: EAS 212, Mth 256 or equivalent.

***CE 421/521**

Analysis of Framed Structures (4)

Generalized analysis of multi-story and irregular structural framework with classical methods; analysis of arches, curved beams and frames with nonprismatic members. Energy methods with introduction to matrix methods. Prerequisite: CE 325.

CE 423/523*Vibration Analysis in Structural Engineering (4)**

Fundamentals of vibration theory; applications in structural engineering. Free, forced, and transient vibration of single and multi-degrees of freedom systems including damping, normal modes, coupling, and normal coordinates. Prerequisites: EAS 212 and Mth 261.

CE 431/531*Stability of Structures (4)**

Study of elastic and inelastic flexural buckling of bars and frames; use of energy methods and successive approximations; bracing of columns and frames; torsional, lateral-torsional, and local buckling. Prerequisites: CE 333, Mth 261 or equivalent.

CE 432/532*Structural Steel Design—LRFD Method (4)**

Design of components of steel structures based on load and resistance factor design method. Prerequisite: CE 333.

CE 433/533*Cold-Formed Steel Design (4)**

Design of cold-formed steel beams, columns, beam-columns, cylindrical tubular members, and connections based on the Allowable Stress Design (ASD) and the Load and Resistance Factor Design (LRFD) methods of the AISI specification. Prerequisite: CE 333.

CE 434**Principles of Reinforced Concrete (4)**

Loads, load factors and structural safety, ultimate strength analysis; short column behavior, design of simple and continuous beams; one-way slabs; serviceability and detailing requirements with reference to current codes. Prerequisites: CE 321, 325.

CE 435**Design of Reinforced Concrete Structures (4)**

Development and splicing of reinforcement; design of long columns, retaining walls, footings, and slabs with reference to current codes; lateral loads; laboratory demonstration of beam and column behavior. Prerequisite: CE 434.

CE 436/536*Masonry Design (4)**

Materials of construction; design of masonry elements, lateral load resisting systems, and connections with reference to current codes. Prerequisite: CE 434.

CE 437**Timber Design (4)**

Design of solid and glued-laminated structural members including arches, connections, plywood components, and diaphragms; design provisions for lateral forces. Prerequisite: CE 325.

CE 438/538*Design of Composite Structures (4)**

Design of composite steel-concrete members based on allowable stress design and load and resistance factor design methods. Prerequisites: CE 333.

CE 440/540**Geosynthetics in Infrastructure Engineering (2)**

Testing and design with polymer-based geosynthetic products in and on soil for the civil infrastructure. Strength-based design applications are introduced with design-by-function principles,

and product approval for transportation, structural, and geotechnical disciplines. Use of geotextiles, geogrids, and geo-composites in slopes, mechanically stabilized earth retaining walls, pavement subgrades, and overlays. Prerequisite: CE 444.

CE 442/542**In Situ Behavior and Testing of Soils (4)**

Introduction to field behavior of soils related to engineering properties; site investigation procedures and in situ testing. Development of fundamental analytical solution techniques for engineering with soil, the use and limitations of elasticity assumptions. Three lectures, one 3-hour laboratory period. Prerequisite: CE 341.

CE 443/543**Introduction To Seismology And Site Evaluation (4)**

Earthquakes and exploration seismology, the origin and occurrence of earthquakes, nature and propagation of seismic waves in the earth, earthquakes as a hazard to life and property. Uses of reflection and refraction exploration seismology, borehole velocity measurements, seismic remote sensing, and direct measurement techniques. Earthquake hazard assessment including liquefaction, ground failure, and site amplification. Techniques for evaluating the susceptibility, potential, and severity of the hazards and other science and engineering applications. Prerequisite: senior/graduate standing. This course is the same as G 475/575; course may be taken only once for credit.

CE 444**Geotechnical Design (4)**

Effect of soil conditions upon the behavior and choice of type of foundation; study of earth pressure theories; design of foundations and earth-retaining structures. Prerequisite: CE 341.

CE 445/545**Geo-environmental Engineering with Geosynthetics (2)**

Application of polymer-based geosynthetic products for geo-environmental and municipal engineering including landfills, soil erosion control, filters, and drains. Testing, design, and product selection for hydraulic, degradation, and chemical stability properties. Introduction to reliability, endurance, and design life with reference to RCRA, ESA, and EPA laws. Prerequisite: CE 341.

CE 448/548**Earthquake Accommodation and Design (4)**

Effects of earthquake shaking in the design of buildings, pipelines, bridges, and dams. Incorporating the earthquake hazard assessment for a project in the design process. The goal of this course is to allow geologists, geotechnical engineers, structural engineers, and architects to see how their particular tasks are impacted by the earthquake effects. Types of analysis used to evaluate earthquake design requirements in several disciplines, including: geology, geotechnical engineering, structural engineering, and architecture. Prerequisite: CE 443/543 or G 475/575. This course is the same as G 477/577; course may be taken only once for credit.

CE 450/550 Transportation Safety Analysis (4)

Incorporating safety in highway engineering and transportation planning that includes high-

way design, operation, and maintenance, as well as human factors, statistical analysis, traffic control and public policy. Design concepts of intersections, interchanges, signals, signs and pavement markings; analyzing data sets for recommendations and prioritization; principles of driver and vehicle characteristics in relation to the roadway. Prerequisite: CE 351.

CE 451/551**Traffic Control and Analysis (4)**

Traffic control principles; maintenance and responsibility for traffic control devices; choice of traffic control; signs, markings, and signals; low-volume roads, temporary control, and school areas, traffic control for highway-rail grade crossings, bicycles, and transit; warrants for control; control techniques and analysis, advanced technologies. Prerequisite: CE 351.

CE 453/553 Freight Transportation and Logistics (4)

Components and performance characteristics of the U.S. freight transportation system, with emphasis on data needs, planning, design, and operation of the entire supply chain.

Discussion of impact of freight on passenger transportation system and economy. Modal emphasis includes freight rail, motor freight, ocean freight, and air freight. Terminal operations. Roles of public and private actors in freight system. Prerequisite: CE 351.

CE 454**Urban Transportation Systems (4)**

Urban street patterns and transportation demand, highway capacity analysis, process of urban transport planning, travel-demand forecasting and its application to traffic studies. Development of transport models, multiple regression analysis, models of land use and trip generations, stochastic trip distribution models, applications and case studies. Route assignment analysis and traffic flow theory. Prerequisite: CE 351.

CE 455/555**Intelligent Transportation Systems (4)**

Introduction to intelligent transportation systems, including enabling surveillance, navigation, communications, and computer technologies. Application of technologies for monitoring, analysis, evaluation, and prediction of transportation system performance. Intervention strategies, costs and benefits, safety, human factors, institutional issues, and case studies. Prerequisite: CE 351. CE 454 recommended.

CE 456/556**Traffic Engineering (4)**

Traffic system components, traffic stream characteristics, traffic studies and data collection, volume studies, speed, travel-time, delay and pedestrian studies, capacity analysis, freeway systems, weaving sections, ramp junctions, rural highways, signalized and unsignalized intersections, signal coordination, arterial operations, and access management. Prerequisite: CE 454.

CE 457/557*Pavement Design (4)**

Pavement structure classification and components, wheel loads and design factors, stresses in flexible pavements, subgrade strength and evaluation, design methods, material characteristics, stresses in rigid pavements, design of concrete pavements, joints and reinforcement, condition surveys. Prerequisite: CE 351.

CE 458/558**Public Transportation Systems (4)**

Performance characteristics of public transportation systems, with emphasis on urban systems. Planning, design, and operational issues related to public transportation systems. Emerging technologies. Prerequisite: CE 351. CE 454 recommended.

CE 459/559**Transportation Operations (4)**

Operation, modeling, and control of unscheduled and scheduled transportation modes; elementary traffic flow concepts; flow, density and speed; scheduling; route and bottleneck capacities; networks; data interpretation; analysis techniques; diagrams; simulation queuing; optimization. Prerequisite: CE 351. CE 454 recommended.

CE 460/560**Access Management Transportation Systems (4)**

Access management issues; geometric design, roadway operation, and access; safety and other benefits; access design concepts; functional integrity of highway; driveway and intersection spacing; functional area of intersection; turn lanes; median openings; access management techniques; regulations and policy; case studies; research issues. Prerequisite: CE 351.

CE 464/564*Hydrologic and Hydraulic Modeling (4)**

Development and application of deterministic and statistical models for hydrologic and hydraulic analysis and design. Presentation of hydrologic processes and development of hydrologic models related to rainfall-runoff including precipitation, infiltration, evapotranspiration, watershed and channel routing. Statistical analysis procedures for hydrologic data including estimation of rainfall and flood frequency. Application of HEC-HMS to model streamflow including model calibration and verification. Modeling steady flow in rivers using HEC-RAS. Prerequisite: CE 362.

CE 467/567*Hydrologic and Hydraulic Design (4)**

Application of hydrologic and hydraulic principles to selected topics in hydrologic and hydraulic design. Topics include risk-based design of hydraulic structures, design of culverts, flood profile computation and flood plain management, design of reservoirs. Design of spillways including development of design flood hydrograph and hydraulic design, design of energy dissipation works. Prerequisite: CE 464/564 or knowledge of HEC 1 and HEC 2.

CE 474/574**Unit Operations of Environmental Engineering (4)**

Unit operations of water and wastewater treatment; pretreatment; sedimentation, filtration, aeration, disinfection, sludge treatment and disposal, advanced waste-water treatment processes. Prerequisite: CE 371.

CE 477/577*Solid and Hazardous Waste Management (4)**

Systematic approach to the complex technical, political, and socio-economic aspects of managing, handling, and disposal of spent solid materials and hazardous wastes. Prerequisite: senior/graduate standing in civil engineering or consent of instructor.

CE 479/579**Fate and Transport of Toxics in the Environment (4)**

Chemical, physical, and biological principles that govern the behavior of toxic materials such as heavy metals and synthetic organic compounds in the environment. Course emphasizes practical ways to represent chemical processes in models of pollutant behavior. Topics include: adsorption of pollutants on soils and sediments; transport across sediment-water and air-water interfaces; bioamplification of pollutants; multi-phase fugacity models of organics; case studies of contaminated surface water, sediment and groundwater. Prerequisite: senior or graduate standing. This course is the same as ESR 479/579; course may be taken only once for credit.

CE 484**Civil Engineering Project Management and Design I (3)**

Engineering design process including owner-design, professional-constructor relationships, procurement procedures, project evolution; contracts, dispute resolution, bonds, warranties; construction documents, including specifications; cost estimating, planning, and scheduling; construction administration; group process, diversity, and leadership. Two lectures, one 3-hour design project laboratory period. Prerequisite: CE 444, CE 454, CE 364, CE 325, and CE 434 or CE 333.

CE 494**Civil Engineering Project Management and Design II (3)**

Synthesis of civil engineering specialties in a diverse multi-disciplinary project. Teamwork approach in design of components and systems to meet stated objectives. Consideration of alternative solutions, methods, and products including constraints such as economic factors, safety, reliability, and ethics. Preparation of design documents, including: memoranda, computations, drawings, cost estimates, specifications, bidding materials; written and oral presentations. Two lectures, one 3-hour design project laboratory period. Prerequisite: CE 484.

CE 501**Research (Credit to be arranged.)**

Consent of instructor.

CE 503**Thesis (Credit to be arranged.)**

Consent of instructor.

CE 504**Cooperative Education/internship (Credit to be arranged.)**

Consent of instructor.

CE 505**Reading and Conference (Credit to be arranged.)**

Consent of instructor.

CE 506**Special Projects (Credit to be arranged.)**

Consent of instructor.

CE 507**Seminar (Credit to be arranged.)**

Consent of instructor.

CE 510**Selected Topics (Credit to be arranged.)**

Consent of instructor.

CE 522/622*Plastic Analysis of Structures (4)**

Techniques in the analysis of structures beyond the elastic limit. Methods of limit analysis and design. Prerequisite: CE 333.

CE 524/624, 525/625*Matrix and Computer Methods in Structural Analysis (4, 4)**

Fundamental concepts of analysis for statically determinate and indeterminate structures utilizing matrices and computers; displacement and force methods applied to trusses and rigid frames; techniques for the analysis of large complex structures for static and dynamic loads. Prerequisite: CE 325.

CE 526/626*Theory of Plates (4)**

Small and large deformation theories of thin plates; numerical and energy methods; free vibrations. Prerequisite: Mth 256.

CE 527/627, 528/628*Finite Elements in Structural Mechanics (4, 4)**

Principles of stiffness analysis of structures, essentials of the finite element formulation of elastic problems with applications to structural mechanics, plates and shells, and other related problems utilizing digital computers. Prerequisite: CE 524/624.

CE 529/629*Structural Dynamics (4)**

Determination of normal modes and frequencies for structural systems. Transient and steady state response. Derivation and solution of governing equations using matrix formulation. Analysis of linear response of structures to dynamic loadings. Stresses and deflections in structures. Prerequisite: CE 423/523.

CE 530/630*Energy Principles in Structural Mechanics (4)**

Review of stress and deformation; material behavior; theorem of virtual work, stationary value of potential and complementary potential; reciprocal theorems, Engesser's theorem, and Rayleigh-Ritz method; thermoelastic behavior. Prerequisite: CE 420/520.

CE 535/635*Prestressed Concrete Design (4)**

Analysis and design of components of prestressed concrete structures with reference to current codes. Prerequisite: CE 434.

CE 537/637*Earthquake Engineering (4)**

Response of structures to ground motions; determination and use of response spectra; seismic design criteria and provisions for buildings and other structures; and review of current practices for earthquake resistant design. Prerequisite: CE 529/629.

CE 539/639*Advanced Steel Design (4)**

Analysis and design of metal structures including connections, plate girders, design loads, structural systems, and bracing. Prerequisite: CE 333.

CE 541/641*Advanced Soil Mechanics (4)**

Study of the advanced principles of soil behavior related to stress-strain, shear strength, permeability, and consolidation. Prerequisite: CE 444.

CE 544/644*Advanced Shallow Foundation Design (4)**

Advanced topics in settlement and bearing capacity analysis of shallow foundation; application of numerical schemes to foundation design. Prerequisite: CE 444.

CE 546/646*Numerical Methods in Geotechnical Engineering (4)**

Application of finite difference and finite element methods to the solution of soil-structure problems, stability of soil masses and foundation installation. Use of commercial computer programs in working applied problems. Prerequisite: CE 444.

CE 547/647*Earth Dams (4)**

Design, construction, and operation of earth and earth-rock dams; seepage analysis, slope stability, and construction procedures. Emphasis includes both the design of new structures and the evaluation of safety of existing facilities. Prerequisite: CE 442.

CE 549/649**Deep Foundation Design and Analysis (4)**

Comprehensive study of both driven and augered pile foundations, including concrete, steel, and timber. In-depth review of design methods for axial and lateral capacity. Special emphasis on the differences between driven piles and drilled shafts, including the role of full-scale load testing in the semi-empirical methods. Introduction to group theory in elasticity and plasticity. Prerequisite: CE 444.

CE 552/652*Highway Design for Capacity (4)**

Principles of highway capacity, traffic characteristics, operational analysis, design and planning of freeways, multi-lane and two-lane rural highways, intersections and arterials, transit facilities. Prerequisite: CE 454.

CE 561/661*Water Resource Systems Analysis (4)**

A development of quantitative techniques used in the analysis of water resource systems for planning, design and operation. Emphasis is placed on the physical, legal and economic aspects and their incorporation into simulation models. Applications include reservoir systems for water supply and hydropower, irrigation planning and operation, and water quality management. Prerequisite: CE 464/564 or equivalent.

CE 565*Watershed Hydrology (4)**

Study of the movement and storage of water in watersheds, emphasizing physical processes. Includes systems analysis of watersheds, precipitation, snowmelt, infiltration, evapotranspiration, ground-water flow, stream flow generation, open channel flow, hydrograph analysis, and an introduction to watershed hydrological modeling. Prerequisites: Mth 252, Ph 201, Stat 244; recommended: ESR 320 and/or an undergraduate course, such as CE 464. This course is the same as ESR 525; course may be taken only once for credit.

CE 566/666**Environmental Data Analysis (4)**

Application of probabilistic and statistical models to the description of environmental data with a focus on hydrology and water quality.

Graphical and quantitative techniques of exploratory data analysis, selection and fitting of appropriate probability distributions, simple and multiple and multivariate regression and their applications to analysis and modeling, and detection of changes and trends in environmental time series. Prerequisites: graduate standing and Stat 243 and 244 or Stat 460.

CE 569/669*Groundwater Hydrology (4)**

Principles of flow and contaminant transport in porous media and application to problems of water supply and contaminant transport. Topics include: properties of porous media; Darcy's law and aquifer equations; solution for steady and unsteady flow problems; flow net analysis; regional vertical circulation; unsaturated flow; well dynamics and pump test analysis; surface-groundwater interactions; water quality and contaminant transport; transport models; transport in heterogeneous porous media and tracer test. Prerequisite: senior/graduate standing in civil engineering.

CE 570/670*Groundwater Modeling (4)**

The objective is to give students a good introduction to practical groundwater flow and contaminant transport modeling. Designed as hands-on and application oriented. Covers the fundamental equations, numerical methods, and modeling techniques with emphasis on conceptual modeling and teaching students how to solve real world problems using an interactive groundwater modeling and visualization system. Specific topics include conceptual representations and grid design, selecting model boundaries, sources and sinks, profile models, special needs for transient simulations, calibration, verification, sensitivity analysis, and several hands-on projects on modeling groundwater contamination, well-field management, and remediation system. Prerequisite: CE 569/669.

CE 571/671*Stochastic Subsurface Hydrology (4)**

A probabilistic approach to analyzing the effects of complex heterogeneity of subsurface environment on field-scale ground-water flow and contaminant transport. Classical transport processes; heterogeneity/ uncertainty and probabilistic representations; temporally variable subsurface flow and lumped parameter water quality models; spatial variability in subsurface flow; contaminant transport processes in heterogeneous media; geostatistical methods, measurement conditioning and parameter estimation; field applications of stochastic methods. Emphasis is placed on analysis of field-scale heterogeneous groundwater systems. Prerequisite: CE 569.

CE 572/672*Environmental Fluid Mechanics I (4)**

Introduction to the basic physical processes which transport pollutants in natural waters; mathematical formulations. Use of predictive mathematical models as a basis for water and air quality management. Prerequisites: EAS 361, CE 371.

CE 573/673*Numerical Methods in Environmental and Water Resources Engineering (4)**

Introduction to the mathematical solution of partial differential equations by finite difference

and finite element techniques. Development of solution approaches to water quality and hydraulic problems in surface and groundwater systems. Analysis of model sensitivities, calibration and verification. Prerequisite: senior or graduate standing in civil engineering.

CE 575/675*Advanced Physical/Chemical Environmental Engineering Processes (4)**

Theoretical and laboratory analysis of major physical and chemical processes used to treat water, wastewater, industrial and hazardous wastes. Analysis of reactor hydraulics, reactor kinetics, coagulation, flocculation, solid-liquid separation processes, adsorption, and gas transfer. Prerequisite: CE 474/574.

CE 576/676*Environmental Fluid Mechanics II (4)**

Introduction to the fundamentals of the fluid dynamics of natural surface waters by analysis of the governing equations of mass, momentum, and heat conservation. Applications include turbulence modeling, finite depth water motions, stratified flow phenomena, and seiche phenomena. Prerequisites: CE 572/672 or EAS 361, CE 362, 371.

CE 578/678*Water Quality Modeling (4)**

Introduction to descriptive modeling approaches for analyzing water quality changes in lakes, reservoirs, rivers, and estuaries. Applications include modeling dissolved oxygen, temperature, nutrients, and algal dynamics. Prerequisites: EAS 361, CE 371.

CE 591/691*Engineering Optimization (4)**

Development of optimization methods applicable to the solution of engineering problems. Conditions for optimality, univariate, and multivariate search methods, constrained optimization. Particular techniques include gradient-based methods, linear programming, and dynamic programming. Prerequisite: graduate standing in engineering.

CE 601**Research (Credit to be arranged.)**

Consent of instructor.

CE 603**Thesis (Credit to be arranged.)**

Consent of instructor.

CE 604**Cooperative Education/Internship (Credit to be arranged.)**

Consent of instructor.

CE 605**Reading and Conference (Credit to be arranged.)**

Consent of instructor.

CE 606**Special Projects (Credit to be arranged.)**

Consent of instructor.

CE 607**Seminar (Credit to be arranged.)**

Consent of instructor.

CE 610**Selected Topics (Credit to be arranged.)**

Consent of instructor.

Computer Science

CS 105

Computing Fundamentals I (4)

Overview of computers and computer technology for non-CS majors. Focus on the personal computer. Hardware performance criteria are discussed and terminology defined. Hardware topics: central processing units (such as microprocessors like Pentium, Athlon, and others) are characterized regarding speed and data (bit) processing capabilities; memory size, speed and types, and how much is needed; storage media and capacity; input/output devices. Software is the primary focus for the remainder of the course. Main topics are system software (Windows, Unix, etc) and applications (such as browsers, word processors, spreadsheets, presentation graphics and database managers). Concludes with legal and ethical issues surrounding computer technology, management information systems, and systems analysis. Recommended prerequisite: high school algebra.

CS 106

Computing Fundamentals II (4)

Introduction to programming designed for the non-CS major. Introduction to the logical thought processes used when programming. Programming language generations, low and high level languages and the more popular high level languages. Puts you in the role of a programmer and takes you through the entire process. Concepts include problem definition, generating a description of its step-by-step solution (the algorithm), writing the program, and finally documenting your program. Tutorial using the programming language Visual Basic and five programming projects are completed. Recommended prerequisites: high school algebra, knowledge of Windows and the ability to use Windows Explorer.

CS 107

Computing Fundamentals III (4)

Introduction to Web programming and associated web tool usage for non-CS majors. Centering around the more sophisticated aspects of browsers. Web pages that represent the input to browsers are defined. In-depth study of HTML, VBScript and JavaScript. Brief exploration into CGI Scripts and other server-side tools. Course differentiates between Web page design (a graphics designer's role) and Web programming, taking the results of their work and committing it to workable code. Recommended prerequisites: high school algebra and CS106 or some programming experience.

CS 161

Introduction to Computer Science I (4)

Introduction to fundamental concepts of computer science. Problem solving, algorithm and program design, data types, control structures, and subprograms. This course is primarily designed for CS majors. Prerequisite: Mth 111.

CS 162

Introduction to Computer Science II (4)

Introduction to software design, use of a variety of data structures, data abstraction, and recursion. Application of recursion in software design. Program correctness, verification, and testing. Students will write a substantial computer program during the term. Prerequisite: CS 161.

CS 163

Data Structures (4)

Data abstraction with formal specification. Elementary algorithm analysis. Basic concepts of data and its representation inside a computer. Linear, linked, and orthogonal lists; tree structures. Data structures are implemented as data abstractions. Sorting and search strategies. Data management. Prerequisite: CS 162.

CS 199

Special Studies (Credit to be arranged.)

CS 200

Computer Systems Programming I (4)

Introduction to computer systems from a software perspective. Systems programming using C and assembly language. Basic computer organization. Representation of data. Machine instruction sets and assembly programming, relationship between C code and assembly code, C pointers and structures and their machine-level representation. Linking and loading. Program debugging. Prerequisite: CS 162.

CS 201

Computer Systems Programming II (4)

Further introduction to computer systems from a software perspective. Basic operating systems concepts and calls. Defining, measuring and improving program performance. The memory hierarchy: storage technologies, caches, virtual memory, memory allocation techniques. Prerequisite: CS 162, 200.

CS 202

Programming Systems (4)

Students will become familiar with the language and operating system environment used in most upper division courses in the Computer Science major curriculum. Use of the file system, operating-system calls, and shell-level programming; low-level debugging of high-level programs. Programming exercises will include applications from data structures (e.g. B-trees) and memory management techniques. Prerequisites: CS 163, 201.

CS 250

Discrete Structures I (4)

Introduces discrete structures and techniques for computing. Sets. Graphs and trees. Functions: properties, recursive definitions, solving recurrences. Relations: properties, equivalence, partial order. Proof techniques, inductive proof. Counting techniques and discrete probability. The Maple language is introduced and used for programming experiments. Prerequisites: CS 163, Mth 252.

CS 251

Discrete Structures II

Continuation of CS 250. Logic: propositional calculus, first-order predicate calculus. Formal reasoning: natural deduction, resolution. Applications to program correctness and automatic reasoning. Introduction to algebraic structures in computing. The Prolog language is introduced and used for programming experiments. Prerequisite: CS 250.

CS 299

Special Studies (Credit to be arranged.)

CS 300

Elements of Software Engineering (4)

Practical techniques of program development for medium-scale software produced by individuals. Software development from problem speci-

fication through design, implementation, testing, and maintenance. The fundamental design techniques of step-wise refinement and data abstraction. A software project will be carried through the development cycle. Prerequisite: CS 202.

CS 305

Social, Ethical, and Legal Implications of Computing (2)

History of computing, social context of computing, professional and ethical responsibilities, risks and liabilities of safety-critical systems, intellectual property, privacy and civil liberties, social implications of the Internet, computer crime, economic issues in computing. Prerequisites: a course in computer science at the 300 or higher level. Sophomore inquiry or a course in public speaking and a course in writing a research paper.

CS 311

Computational Structures (4)

Introduces the foundations of computing. Regular languages and finite automata. Context-free languages and pushdown automata. Turing machines and equivalent models of computation. Computability. Introduction to complexity. The Prolog language is used for programming experiments. Prerequisite: CS 251.

CS 321, 322

Languages and Compiler Design (4, 4)

Principles of programming languages and language implementation by compilation. Techniques of language definition. Run-time behavior of programs. Compilation by recursive descent. Use of LR compiler-generation tools. Design and implementation of a compiler for a small language. Prerequisites: CS 201, 202, 300, 311.

CS 333

Introduction to Operating Systems (4)

Introduction to the principles of operating systems and concurrent programming. Operating system services, file systems, resource management, synchronization. The concept of a process; process cooperation and interference. Introduction to networks, and protection and security. Examples drawn from one or more modern operating systems. Programming projects, including concurrent programming. Prerequisites: CS 200, 201, 311.

CS 340

Discrete Structures for Engineers (4)

A one-term introduction to discrete structures with applications to computing problems. Topics include sets, relations, functions, counting, graphs, trees, recursion, propositional and predicate logic, proof techniques, Boolean algebra. The course may not be used as part of the degree requirements for the BS degree in Computer Science. Prerequisites: CS 163, Math 252.

CS 350

Algorithms and Complexity (4)

Techniques for the design and analysis of algorithms. Case studies of existing algorithms (sorting, searching, graph algorithms, dynamic programming, matrix multiplication, fast Fourier transform.) NP-Completeness. Prerequisite: CS 311.

CS 386

Introduction to Databases (4)

Introduction to fundamental concepts of database management with the relational model. Schema design and refinement, query lan-

guages, transaction management, security, database application environments, physical data organization, overview of query processing, physical design tuning. Prerequisites: CS 163, 250, 251.

**CS 399
Special Studies (Credit to be arranged.)**
Consent of instructor.

**CS 401
Research (Credit to be arranged.)**
Consent of instructor.

**CS 403
Honors Thesis (Credit to be arranged.)**
Consent of instructor.

**CS 404
Cooperative Education/Internship (Credit to be arranged.)**
Consent of instructor.

**CS 405
Reading and Conference (Credit to be arranged.)**
Consent of instructor.

**CS 406
Special Projects (Credit to be arranged.)**
Consent of instructor.

**CS 407
Seminar (Credit to be arranged.)**
Consent of instructor.

**CS 409
Practicum (Credit to be arranged.)**
Consent of instructor.

**CS 410
Selected Topics (Credit to be arranged.)**
Consent of instructor.

**CS 415/515
Parallel Programming (4/3)**
An introduction to parallel programming concepts and techniques. Topics include: parallel programming models and languages, share-memory programming, message-passing programming, performance models and analysis techniques, domain-specific parallel algorithms. Prerequisites: CS 321 and CS 333.

**CS 420/520
Object-Oriented Programming (4/3)**
The fundamental concepts of object-oriented programming languages, including data abstraction and typing, class inheritance and generic types, prototypes and delegation, concurrency control and distribution, object-oriented databases, and implementation. To illustrate these issues, programming assignments in languages such as Smalltalk, Eiffel and C++ will be given. Prerequisite: CS 322.

**CS 438/538
Computer Architecture (4/3)**
Processors, memory hierarchy, and bus systems. Multi-level caches and cache coherence in MP systems. Arithmetic algorithms. RISC vs. CISC instructions, pipelining, and software pipelining. Superscalar, superpipelined, and VLIW architectures. Connection networks. Performance evaluation, simulation, and analytic models. Performance enhancement through branch prediction and out-of-order execution. Prerequisite: CS 322 or 333.

**CS 441/541
Artificial Intelligence (4/3)**
Introduction to the basic concepts and techniques of artificial intelligence. Knowledge rep-

resentation, problem solving, and AI search techniques. Program will be written in one of the AI languages. Prerequisites: CS 202, 311.

**CS 442/542
Advanced Artificial Intelligence:
Combinatorial Games (4/3)**
Covers the theory and practice of finding optimal and satisfying solutions to one-player and two-player combinatorial games, including such popular games as Sokoban, Othello, checkers, chess, backgammon, bridge, and CCGs. Simple applications in decision theory and economics may also be discussed. Emphasis on implementation of state-of-the-art solution techniques. Prerequisite: CS 202 or experience with algorithms and data structures.

**CS 443/543
Advanced Artificial Intelligence:
Combinatorial Search (4/3)**
Explores methods for the solution of constraint satisfaction and related problems using search techniques, in the context of real-world problems such as resource-bounded scheduling, enterprise planning, classical planning, and one- and two-player games. Emphasis on coding projects, and on reading and reporting on selected literature. Prerequisite: CS 202 or experience with algorithms and data structures.

**CS 447/547, 448/548
Computer Graphics (4/3, 4/3)**
This course will provide an introduction to graphics systems and applications. Basic structure of interactive graphics systems, characteristics of various hardware devices. Control of display devices, implementation of simple packages, device independence, and standard packages. Distributed architectures for graphics, hidden line and hidden surfaces algorithms, representations of curves and surfaces. Prerequisites: CS 202, Mth 261.

**CS 451/551
Numerical Computation (4/3)**
Introduction to numerical methods. Includes topics from elementary discussion of errors, polynomials, interpolation, quadrature, linear systems of equations, and solution of nonlinear equations. Prerequisites: Mth 261; CS 200.

**CS 452/552
Building Software Systems
with Components (4/3)**
Designed to familiarize students with the concepts behind and opportunities afforded by modern component architectures, such as Microsoft COM, Java Beans, and CORBA. Students are exposed to component development techniques and methods for developing complex software architectures using components. Students become familiar with component development, scripting and composing components, and the strengths and weaknesses of using components in designing large complex software systems. Prerequisites: CS 300, 333, 350; knowledge of C++ or Java programming.

**CS 454/554
Software Engineering (4/3)**
Current methodologies for the development of large, industrial strength software systems. Topics include requirements, specification, design, implementation, testing, project management and cost estimation, formal methods, and software process improvement. Prerequisite: CS 321.

**CS 457/557
Functional Languages (4/3)**
Introduction to functional notation, recursion, higher-order functions, reasoning about functions, and models for the evaluation of applicative expressions. Use of functional languages. Prerequisites: CS 202, 311.

**CS 465/565
Server-side Applications: Construction and Analysis (4/3)**
Covers the basics of programming in Perl and its use as a vehicle for writing CGI-Bin scripts for the World Wide Web. Explores the use of JavaScript as a client-side adjunct. Topics include basic Perl programming; the Client-server Model used by the World Wide Web; CGI-Bin scripts; security and accessibility concerns; HTTP protocols; human-interface issues on the World Wide Web; and elementary JavaScript programming. Prerequisites: CS 300 and 333 or software development experience and CS 533.

**CS 467/567
The Wireless Web (4/3)**
Covers the basics of the Wireless Application Protocol (WAP) as used in modern mobile phones and other handheld devices. Provides an overview of the WAP architecture, as well as an in-depth exploration of the WAP Application Layer (WAE), including WML, WMLScript, and the WAP push framework. Prerequisite: CS 465/565.

**CS 485/585
Cryptography (4/3)**
The goal of cryptography is the encoding of information via a cryptographic system. Cryptanalysis studies the breaking of cryptosystems. This course focuses on cryptography but with respect to cryptanalysis. An overview of classical systems with an in-depth examination of modern cryptosystems. This includes block algorithms such as DES; public-key cryptosystems, such as RSA; and one-way functions. Additional topics include cryptographic protocols, signature schemes, pseudo-random number generation, Shannon's information theory, and stream ciphers. Prerequisite: CS 350.

**CS 487, 488
Software Engineering Capstone (3, 3)**
Emphasizes teamwork in small groups on a substantial project that will be performed for a real customer. Projects are chosen so as to provide interdisciplinary content with project proposals being solicited from the community at large. Projects that involve students as well as customers from other disciplines are encouraged. Lectures will be directed toward the management of software development projects such as those being carried out by the teams. It is the intent of the course to provide a capstone experience that integrates the materials contained in the remainder of the CS curriculum through work on a project that applies this material in another discipline. Each team member will contribute to the design, documentation, and testing phases of the project. This course creates an obligation for participation for two consecutive quarters. Prerequisites: senior standing. For CS majors: CS 322, 333, 350. Non-CS majors: permission of the instructor.

**CS 491/591
Introduction to Computer Security (4/3)**
Provides a broad overview of computer security. Provides a solid theoretical foundation, as

well as real-world examples, for understanding computer security. Fundamental theoretical results, foundational models, and salient examples will be covered. Security in computer operating systems, networks, and data will be covered, with emphasis on operating system and program security. Prerequisites: CS 333, 350, C and Java programming.

CS 492/592

Computer Security Practicum (4/3)

Practical study of good security practices in software. Issues of correctly implementing security strategies, including why some strategies fail. State-of-the-art implementation techniques and appropriate conditions under which these techniques apply (or not). Students will apply concepts from software engineering, cryptography, and security theory to a non-trivial project that will stress correct secure programming techniques. Prerequisites: CS 333, CS 491/591.

CS 494/594

Internetworking Protocols (4/3)

Advanced study of the protocols and algorithms used in the Internet (IETF) family of networking protocols. For example, ARP, IP, UDP, TCP, multicasting, routing protocols like RIP and OSPF, and application protocols like DNS, NFS, SNMP, FTP and HTTP. Issues such as addressing, name service, protocol design, and scalability will be explored. Prerequisite: CS 333.

CS 501

Research (Credit to be arranged.)

Consent of instructor.

CS 503

Thesis (Credit to be arranged.)

Consent of instructor.

CS 504

Cooperative Education/Internship (Credit to be arranged.)

Consent of instructor.

CS 505

Reading and Conference (Credit to be arranged.)

Consent of instructor.

CS 506

Special Projects (Credit to be arranged.)

Consent of instructor.

CS 507

Seminar (Credit to be arranged.)

Consent of instructor.

CS 509

Practicum (Credit to be arranged.)

Consent of instructor.

CS 510

Selected Topics (Credit to be arranged.)

Consent of instructor.

CS 533/633

Concepts of Operating Systems (3)

Survey of concepts and techniques used in modern operating systems. Sample concepts covered are concurrency, IPCs, scheduling, resource allocation, memory management, file systems, and security. Techniques for implementing operating systems taught through a programming project. Prerequisite: CS 333.

CS 549/649

Computational Geometry (3)

Perspective and projective geometry. Analytic projective geometry, projective lines and projective planes. Projective transformations of lines and planes. Homogeneous coordinates.

Applications to two-dimensional computer graphics. Conic sections in design.

Prerequisites: CS 163 and 451.

CS 550/650

Parallel Algorithms (3)

Definition and nature of parallel computation. Parallel computation from the point of view of hardware/architecture, program/scheduling, and algorithms. Why and how parallel computation is different from serial computation. Examples to highlight the differences. Parallel algorithms in general: illustration of the most important features and techniques. Illustration of the limitations. A survey of major results, general form of results, limitations on speed-up. Prerequisite: CS 350.

CS 553/653

Design Patterns (3)

Software design patterns are reusable solutions to recurring software problems. They capture successful experiences and convey expert insight and knowledge to less experienced developers. Course provides an in-depth view of patterns using Java as the presentation language. Course is suitable to software architects and developers who are already well-versed in this language. In addition, it offers continuous opportunities for learning the most advanced features of the Java language and understanding some principles behind the design of its fundamental libraries. Prerequisites: programming in Java and CS 520.

CS 555/655

Software Specification and Verification (3)

Theoretical and practical aspects of the software development process or software lifecycle. Covers the first part of the cycle: formulating the external requirements, specifying what the software is to do, and the abstract design. Emphasis will be on the formal aspects of specification and verification.

CS 556/656

Software Implementation and Testing (3)

Theoretical and practical aspects of the software development process or software lifecycle. Covers the second part of the cycle: detailed design, implementation in a programming language, testing, and maintenance. Emphasis will be on the technical aspects of software testing.

CS 558/658

Programming Languages (3)

In-depth study of current and historical issues in the design, implementation, and application of programming languages. Topics range from basic to advanced. Areas include syntax, semantics, scoping, typing, abstraction, exceptions, and concurrency. Computational paradigms such as functional, logic, and/or object oriented are analyzed. Several "recent" programming languages used. Prerequisite: CS 322.

CS 559/659

Software Measurement and Models (3)

Survey, evaluation, and application of software measurement techniques and models. Particular emphasis on product metrics such as Software Science, Cyclomatic Complexity, and Function Points.

CS 560/660

Human-Computer Interaction (3)

Introduction to the basic theory of human-computer interaction. Principles of human cognition and interface design, interface evaluation techniques. Several prototyping tools will be

presented. A project is required. Prerequisites: Stat 460, CS 202.

CS 572/672

Operating System Internals (3)

Internals of a specific operating system including structure of the kernel, block buffering cache, file system structure and system calls, process structure and scheduling, memory management, device driver interface, and inter-process communication. Prerequisite: CS 333.

CS 573/673

Computer Communications (3)

Layers of the ISO/OSI reference model; basics of computer telecommunications, networking technology; communications protocols, their function and impact on the performance of computer communications; traffic patterns in a data network. Prerequisites: CS 333, Stat 460.

CS 575/675

Computer Systems Analysis (3)

An advanced course on computer systems. Topics include operating systems, performance evaluation, device analysis, construction and proof of monitors, file systems, objects and processes, reliability, and protection. Prerequisites: CS 333, Stat 460.

CS 576/676

Computer Security (3)

Introduction to the principles of computer security. Development of the notion of security through formal models and the examination of existing secure systems. Systems intended for the protection of classified information as well as commercial systems will be examined. Prerequisite: CS 333.

CS 577/677

Modern Language Processors (3)

An advanced course on compiler construction for modern programming languages, such as object-oriented or functional languages. Topics include type-checking, executable intermediate representations, interpretation and virtual machines, code generation for modern architectures, memory management and garbage collection, and optimization. Prerequisite: CS 322.

CS 579/679

Formal Verification of Hardware/Software Systems (3)

Introduction to the formal verification of functional correctness of hardware and software systems. Topics to be covered include: formal logic for system verification (first-order logic, higher-order logic, temporal logic), formal specifications, theorem proving systems, circuit verification, microprocessor verification, and system software verification. Prerequisites: CS 321, 333.

CS 581/681

Theory of Computation (4/3, 4/3)

Computability theory: study of models of computation (Turing, Church, Kleene), recursive function theory, properties of recursive, and recursively enumerable sets. Prerequisite: CS 311.

CS 582/682

Theory of Computation: Advanced Topics (4/3, 4/3)

Complexity theory: study of resource bounded computation, the complexity classes (P, NP, PSPACE, and PH), NP-completeness, relativized computation, randomized classes. Prerequisites: CS 311, 350.

CS 583/683**Automata and Formal Languages (3)**

An advanced study of the theory of automata, formal languages and computational complexity. Main subjects are finite state concepts, formal grammars, computability, Turing machines, and computational complexity. Prerequisite: CS 582/682.

CS 584/684**Algorithm Design and Analysis (3)**

An advanced in-depth study in the design and analysis of algorithms. Topics include models of computation, sorting, data structures, graph algorithms, matrix multiplication, fast Fourier transform, polynomial arithmetic, pattern matching, and NP-complete problems. Prerequisite: CS 350 or equivalent.

CS 586/686**Introduction to Database Management (3)**

Introduction to fundamental concepts of database systems at the graduate level. Database system architecture; relational data model and languages; data modeling; normalization theory; transaction management; security; object databases; data warehouses; deductive databases. Prerequisites: CS 163, 250, and 251.

CS 587/687**Relational Database Management Systems (3)**

Internal design of a relational database management system. Concurrency control; lock managers; crash recovery; query and operator evaluation; query optimization; storage management; index structures; system catalogs. Prerequisites: CS 586/686 and CS 333.

CS 588/688**Distributed Database Systems (3)**

Theory and design of distributed database systems. Concurrency control and recovery, distributed deadlock detection, replication, query processing and optimization, parallel database machines, multimedia servers, and heterogeneous multidatabase systems. Prerequisites: CS 587/687.

CS 595/695**Network Routing (3)**

Class will study modern packet-based routing protocols as used in the Internet including interior gateway protocols (IGPs) like RIPv1, RIPv2, OSPF and exterior gateway protocols (EGPs) like BGP. Certain routing control theory topics will be introduced; for example, link-state and vector distance routing, policy routing, source routing and tunnels, and the general use of metrics in existing routing protocols. Other aspects of routing protocols may be presented as time permits; for example, multicast routing, mobile routing, and tag-switching protocols. This class may take the form of a seminar with students asked to present various aspects of recent experimental research in routing. Prerequisite: CS 594.

CS 596/696**Network Management and Security (3)**

Covers both network management and network security. Network management will include the design of LAN-based networks, including spanning tree protocols, bridge learning protocols, virtual LANs, and Ethernet switches, and the security of switches and routers. Network management protocols will be covered in-depth including switch and router management information bases, as well as associated SNMP pro-

ocols, and network monitoring tools. The second half of the class will focus on network security. In order to understand the network security problem, the security section will begin with a review of various forms of network attacks. We then turn to network-side security management including both passive measures like firewall defense schemes including packet filters, and bastion hosts. Newer secure protocols will then be covered including network-layer security and various application-layer secure protocols. Prerequisite: CS 594.

Electrical and Computer Engineering

ECE 171**Digital Circuits (4)**

Foundation course in digital design. Topics such as number systems, basic logic gates, TTL device parameters, Boolean algebra, logic circuit simplification techniques, timing analysis, the application of MSI combinational logic devices, programmable logic devices, flip-flops, synchronous state machines and counters. Introduces students to a systematic design methodology. Uses computer-based tools such as schematic capture programs, programmable logic development programs, and digital circuit stimulators. Prerequisite: Mth 111.

ECE 199**Special Studies (Credit to be arranged.)**

Consent of instructor.

ECE 201, 202, 203**Electrical Engineering Laboratory I, II, III (1, 1, 1)**

Concurrent enrollment in: ECE 221, 222, 223, respectively.

ECE 221**Electric Circuits (4)**

Experimental laws, network theorems, and computer analysis techniques of electrical circuit analysis. Network responses to various forcing functions using time-domain and phasor-domain methods. Prerequisite: Mth 253.

ECE 222**Signals and Systems I (4)**

Introduction to continuous time and discrete time systems. Thorough exposure to the Laplace transform for circuit and system analysis, transfer functions, Bode plots, analog filters, and two port networks. Prerequisite: ECE 221, ECE 201; Mth 256 or concurrent.

ECE 223**Signals and Systems II (4)**

Continuous-time and discrete-time Fourier series, continuous-time Fourier transform, discrete-time Fourier transform, fast Fourier transform, sampling, aliasing, communications, modulation, the z-transform, discrete-time filters. Prerequisite: ECE 222, ECE 202.

ECE 271**Digital Systems (5)**

Second course in a sequence of digital and microprocessor courses. Covers shift register devices and circuits; design, timing analysis, and application of synchronous state machine circuits using discrete devices and programmable logic devices; timing analysis of asynchronous state machines, arithmetic circuits and devices; internal architecture of a microprocessor; design and interfacing of memory systems; and an

introduction to design for test techniques.

Reinforces the systematic design methodology, documentation standards, and use of computer-based tools introduced in ECE 171; weekly laboratory. Prerequisite: ECE 171, ECE 201.

ECE 301, 302, 303**Electrical Engineering Laboratory IV, V, VI (1, 1, 1)**

Prerequisites: ECE 201, 202, 203. Concurrent enrollment in: ECE 321, 322, 323, respectively.

ECE 311**Feedback and Control (5)**

Stability concepts for linear time-invariant networks, Routh-Hurwitz criterion. Stability through feedback, Nyquist, and root-locus design methods. Compensation methods derived from Bode plots; weekly laboratory. Prerequisite: ECE 222, Mth 256.

ECE 321**Electronics I (4)**

Introduction to solid state electronics, leading to the physical properties and characteristics of solid state electronic devices: diodes, bipolar junction transistors and field effect transistors. Analysis and design of analog systems and operational amplifier based amplifiers, active filters, oscillators and rectifier topologies. Application of a computer-aided design (CAD) tool, such as SPICE. Prerequisite: ECE 222.

ECE 322**Electronics II (4)**

Study of digital circuits used in various logic families. Analysis of electronic amplifiers using small-signal models of electronic devices. Differential and operational amplifier design techniques involving current mirrors and active loads. Frequency response of analog circuits, review of transfer functions and Bode analysis. Computer-aided design. Prerequisite: ECE 321, ECE 301.

ECE 323**Electronics III (4)**

Introduction to feedback amplifier analysis and design. Stability criteria for feedback topologies. Design and analysis of sinusoidal waveform generators. Introduction to phase-locked loops. Study of digital circuits used in various logic families. Computer-aided design. Prerequisite: ECE 322, ECE 302, ECE 223, ECE 203.

ECE 331**Engineering Electromagnetics I (4)**

Theory and applications of transmission lines and their effects on signal integrity; review of vector calculus, static Maxwell's equations, theory and applications of electrostatics and magnetostatics. Prerequisites: Mth 254, Mth 256, Ph 223.

ECE 332**Engineering Electromagnetics II (5)**

Review of Maxwell's equations and electromagnetic wave propagation, boundary conditions and reflections, antenna analysis and design; practical aspects: crosstalk, electromagnetic interference and compatibility; weekly lab. Prerequisite: ECE 331.

ECE 341**Introduction to Computer Hardware (4)**

Presents an overview of computer architecture and programming from a hardware viewpoint. Topics covered in the class include: digital logic—gates, multiplexers, flip-flops, state machines; computer arithmetic operations; basic computer architecture—data path, control, and buses;

pipelining—HW and CICS vs. RISC; memory hierarchy and virtual memory; input/output techniques—polling, interrupt, DMA; hardware view of computer system components—keyboard, mouse, displays, printers, disks, modems, and LANs. This course may not be used as part of the degree requirements for an electrical engineering or a computer engineering baccalaureate degree. Prerequisites: CS 200, CS 201.

**ECE 351
Hardware Description Languages and Prototyping (4)**

Introduces the students to the Verilog Hardware Description Language and describes its role in the electronic design automation environment. Students learn how to prototype digital designs using FPGAs. Prerequisite: ECE 271.

**ECE 371
Microprocessors (4)**

Covers microprocessor instruction set architecture, structured development of assembly language programs, interfacing assembly language and high-level language programs, interrupt procedures, handshake data transfer, and interfacing with simple digital devices and systems. Also included are introductions to microcomputer buses, the memory system design, virtual memory systems, and an overview of microprocessor evolution. Course includes several software and hardware development projects. Prerequisite: EAS 102 or CS 161, ECE 271.

**ECE 372
Microprocessor Interfacing and Embedded Systems (5)**

Teaches the hardware and software design of embedded microprocessor systems. Topics include sensor, transducer, and actuator interfacing; microprocessor-based process control; interfacing with display, vision, and speech systems; Real Time Operating System (RTOS) operation; creation of device drivers; intelligent robotics applications; and an introduction to the Unified Modeling Language (UML); weekly laboratory. Prerequisite: ECE 371.

**ECE 401
Research (Credit to be arranged.)**

Consent of instructor.

**ECE 403
Honors Thesis (Credit to be arranged.)**

Consent of instructor.

**ECE 404
Cooperative Education/Internship (Credit to be arranged.)**

Consent of instructor.

**ECE 405
Reading and Conference (Credit to be arranged.)**

Consent of instructor.

**ECE 406
Special Projects (Credit to be arranged.)**

Consent of instructor.

**ECE 407
Seminar (Credit to be arranged.)**

Consent of instructor.

**ECE 409
Practicum (Credit to be arranged.)**

Consent of instructor.

**ECE 410
Selected Topics (Credit to be arranged.)**

Consent of instructor.

**ECE 411
Industry Design Processes (2)**

Prepares students for ECE 412 Senior Project Development I and ECE 413 Senior Project Development II classes. Topics covered include: design documentation standards; building and managing effective teams; product development steps; developing a project proposal; the design process; Intellectual Property; Non-Disclosure Agreements, and professional ethics; Design for X; and design for the environment. Class has weekly lectures and a small team-based term project. Prerequisite: Wr 227, senior standing in the University, and completion of all junior-level required ECE classes. For non-ECE majors, consent of instructor.

**ECE 412
Senior Project Development I (4)**

In this course, groups of three to five students will apply the structured design methodology learned in ECE 411 or UnSt 421 to original projects with the assistance of faculty and industrial/community advisers. After initial research each student group will prepare a written and oral project proposal. Each student is required to keep a log of his or her individual design work and to turn in weekly progress reports. At periodic intervals, each group will give an oral progress report to the entire class. Prerequisite: ECE 411, ME 491, or UnSt 421 (Industry Design Processes), Wr 227.

**ECE 413
Senior Project Development II (2)**

Continues development of the design projects started in ECE 412 or UnSt 421 to their conclusion. Each student maintains a log of his or her individual work and turns in weekly progress reports. Each group prepares a final written report and delivers a final oral report to the entire class. *Note:* Non ECE/CpE majors are welcome in this class, but they do not need it to fulfill the University Capstone requirement.

**ECE 415/515
Fundamentals of Semiconductor Devices (4)**

Solid-state electronic devices; operation, fabrication and applications; single crystal growth, p-n junction, diodes, bipolar junction transistors, MOS capacitor, FETs. Course provides students with a sound understanding of existing devices and gives the necessary background to understand the problems and challenges of the microelectronic manufacturing. Prerequisites: Ph 319, ECE 322.

**ECE 416/516
Integrated Circuit (IC) Technologies (4)**

Microelectronic processing of solid-state devices and integrated circuits. A base for understanding more advanced processing and what can and cannot be achieved through IC fabrication. Oxidation, diffusion, and ion implantation will be discussed. Bipolar, CMOS and BiCMOS fabrication processes. DRAM technology. Defining system rules for IC layout. Packaging and yield. New technologies, such as Wafer-Scale Integration and Multi-Chip Modules, will be discussed. Students will be introduced to the concept of designing for manufacturability. Prerequisite: ECE 415/515.

**ECE 418/518
Linear System Analysis I (4)**

Advanced concepts of continuous-time signals, systems, and transforms. Signals: periodicity, orthogonality, basis functions; system: linearity,

super-position, time-invariance, causality, stability, and convolution integral; transforms: Fourier series and Fourier transform, Hilbert and Hartley transform, Laplace transform. Prerequisite: ECE 223.

**ECE 419/519
Linear System Analysis II (4)**

Advanced concepts of discrete-time signals, systems, and transforms. Signals: periodicity, orthogonality, basis functions; system: linearity, super-position, time-invariance, causality, stability, and convolution sum; transforms: Z Transform, discrete Fourier transform and Fast Fourier transform, discrete Hilbert and Hartley transform; State Space description of a system. Prerequisite: ECE 418/518.

**ECE 421/521
Analog Integrated Circuit Design I (4)**

Modeling of IC devices: transistors, capacitors, resistors. Temperature and device parameter variation effects. Building blocks of analog integrated circuits: current sources and mirrors, gain stages, level shifters, and output stages. Design of supply and temperature independent biasing schemes. CAD tools for circuit design and testing. Prerequisite: ECE 323.

**ECE 422/522
Analog Integrated Circuit Design II (4)**

Analysis and design of BJT and MOS operational amplifiers, current-feedback amplifiers, wideband amplifiers and comparators. Frequency response of amplifiers. Feedback techniques, analysis and design. Stability and compensation of amplifiers, high slew-rate topologies. Noise in IC circuits. Fully differential circuits, analog multipliers and modulators. CAD tools for circuit design and testing. Prerequisite: ECE 421/521.

**ECE 425/525
Digital Integrated Circuit Design I (4)**

Students in electrical and computer engineering are introduced to the analysis and design of digital integrated circuits. A design project is an integral part of this course. Prerequisite: ECE 323, Stat 451.

**ECE 426/526
Digital Integrated Circuit Design II (4)**

Students are instructed in methods and the use of computer-aided design tools for the design and testing of large-scale integrated digital circuits. A design project is an integral part of this course. Prerequisite: ECE 425/525.

**ECE 428/528
VLSI Computer-Aided Design (4)**

Introduces basic techniques and algorithms for computer-aided design and optimization of VLSI circuits. The first part discusses VLSI design process flow for custom, ASIC and FPGA design styles and gives an overview of VLSI fabrication with emphasis on interconnections. The necessary background in graph theory and mathematical optimization is introduced. In the second part, application of different analytical and heuristic techniques to physical design (partitioning, placement, floorplanning and routing) of VLSI circuits is studied. We shall emphasize VLSI design issues encountered in deep submicron technology. Throughout the course students will be exposed to research methodology and to a set of academic and commercial CAD tools for physical design. Prerequisite: senior or graduate standing.

ECE 431/531**Microwave Circuit Design I (4)**

Passive microwave components. Design of microstrip circuits. Active high frequency devices. Microwave computer aided design. Prerequisite: ECE 332.

ECE 432/532**Microwave Circuit Design II (4)**

Small-signal amplifier design for gain and noise. Non-linear effects and nonlinear circuit design. Oscillator design. Introduction to MMIC design. Design project is an integral part of this course. Prerequisite: ECE 431/531.

ECE 441/541**Electrical Energy Systems Design I (4)**

Three-phase power, per unit system of calculations, impedance and reactance diagrams, nodal equations, bus admittance and impedance matrices, transformer and synchronous generator modeling, symmetrical components, and fault studies using symmetrical components. Prerequisite: ECE 332.

ECE 442/542**Electrical Energy Systems Design II (4)**

Fault studies with admittance and impedance matrices, system protection fundamentals, dc transmission, solution of linear algebraic equations as applied to power flow methods, industrial grounding practices. Prerequisite: ECE 441/541.

ECE 445/545**Power Electronic Systems Design I (4)**

Basic DC-to-DC switching converter topologies are presented. Operation in various modes is examined. Steady state design is undertaken using state space techniques and equivalent circuit modeling. Design issues concerning semiconductor devices and magnetic design are also addressed. Prerequisite: ECE 322.

ECE 446/546**Power Electronic Systems Design II (4)**

Dynamic analysis of DC-to-DC converters is presented using state space techniques and the method of equivalent circuit modeling of the switching device. Different control techniques such as current programming and sliding mode control are introduced. Inverter and input current waveshaping rectifier circuits are also introduced. Prerequisite: ECE 445/545.

ECE 451/551**Control Systems Design I (4)**

State space description of linear systems. Controllability and observability. State feedback used in controller and observer design by pole placement. Optimal control, linear quadratic regulator, linear quadratic estimator (Kalman filter), linear quadratic Gaussian, and linear quadratic Gaussian with loop transfer recovery design procedures. Prerequisite: ECE 311, Mth 261 or Mth 343.

ECE 452/552**Control Systems Design II (4)**

Discrete-time control systems, z transforms, difference equations, pulse transfer function, sampling, data hold, block diagram reduction. Jury stability test. Various approaches to classical control design of discrete time controllers. State space analysis and design in discrete-time. Prerequisite: ECE 451/551.

ECE 455/555**AI: Neural Networks I (4)**

Introduces approach for developing computing devices whose design is based on models taken

from neurobiology and on notion of "learning." A variety of NN architectures and associated computational algorithms for accomplishing the learning are studied. Experiments with various of the available architectures are performed via a simulation package. Students do a major project on the simulator, or a special programming project. Prerequisites: senior standing in ECE/CPE or CS, or graduate standing.

ECE 456/556**AI: Neural Networks II (4)**

Focuses on applications. Topics in fuzzy set theory, control theory, and pattern recognition are studied and incorporated in considering neural networks. A design project (using NN simulator) in selected application area is done by each student. Prerequisite: ECE 455/555.

ECE 457/557**Engineering Data Analysis and Modeling (4)**

Introduces statistical learning theory and practical methods of extracting information from data. Covers time-proven methods of statistical hypothesis testing, linear modeling, univariate smoothing, density estimation, nonlinear modeling, and multivariate optimization. Student project presentations and reports familiarize students with research methodology and professional journal standards. Prerequisites: Mth 343 and Stat 451.

ECE 461/561**Communication Systems Design I (4)**

An introduction to signals and noise in electrical communication systems; signal spectra and filters, noise and random signals, baseband transmission of analog and digital signals, linear modulation and exponential modulation. Prerequisite: ECE 223.

ECE 462/562**Communication Systems Design II (4)**

Study of the relative merits of communication systems, noise in continuous wave and pulse modulation schemes, information theory, digital data systems, and advanced topics. Prerequisite: ECE 461/561.

ECE 465**Digital Signal Processing (4)**

Intended to teach students the skills to design a complete DSP-based electronic system. Students will have a design project using embedded DSP hardware and software. Topics include: digital processing of analog signals, A/D converters, D/A converters, digital spectral analysis, digital filter design, signal processing applications and multi-rate signal processing. Prerequisite: ECE 223.

ECE 478/578**Intelligent Robotics I (4)**

Basic problems of intelligent robotics. Hardware for Artificial Intelligence and Robotics. Formulation and reduction of problems. Tree-search. Predicate calculus and resolution method. Methods of formulating and solving problems in logic programming. Fuzzy Logic. Logic programming and artificial intelligence in robot systems. Reasoning by analogy and induction. Associative processors. Prerequisite: ECE 372.

ECE 479/579**Intelligent Robotics II (4)**

Sensors. Computer vision hardware. Problems in image processing, vision, manipulation, and planning. Machines for image processing and computer vision. Morphological processors. Manufacturing inspection. Non-numeric computers. Path planning. Localization. Use of rea-

soning and learning. Applications in scheduling, planning, and assignment. Computer architectures for robotics. Integrated robotic systems for manufacturing. Architectures of comprehensive mobile robots. Robots in health care. System integration. Examples of application. Prerequisite: ECE 478/578.

ECE 481/581**ASIC: Modeling and Synthesis (4)**

Covers the fundamentals of the ASIC design process. The topics include ASIC design Flow, basic HDL constructs, testbenches, modeling combinational and synchronous logic, modeling finite state machines, multiple clock domain designs, qualitative design issues, ASIC constructions. Prerequisites: ECE 271, 371, 372.

ECE 483/583**Low Power Digital IC Design (4)**

Introduction to the existing techniques for IC power modeling, optimization, and synthesis. Topics include: sources of power dissipation, design for low power, voltage scaling approaches, power analysis techniques, power optimization techniques, low-power system-level designs. Focus on abstraction, modeling, and optimization at all levels of design hierarchy, including the technology, circuit, layout, logic, architectural, and algorithmic levels. Prerequisite: ECE 425/525.

ECE 485/585**Microprocessor System Design (4)**

Advanced hardware and software design of desktop type microcomputer systems. Topics include large project design management and documentation; DRAM system design, cache organization, connections, and coherency; the memory hierarchy and virtual memory; I/O buses such as AGP, PCI-X, and Infiniband; multithreaded operating system considerations; JTAG(IEEE1149.1) and Design For Test; high frequency signal integrity; and power supply considerations. Team-based, independent design projects are a substantial part of the homework for this class. Prerequisite: ECE 372.

ECE 486/586**Computer Architecture (4)**

An introduction to the key concepts of computer system architecture and design. Topics include the design and analysis of instruction set architectures, memory systems, and high-performance IO systems; basic CPU implementation strategies; basic pipelined CPU implementation; performance analysis; and a survey of current architectures. Prerequisite: ECE 485/585.

ECE 491/591**Laser Systems Design I (4)**

Laser topics: especially design of laser, fiber-optic, and related optical systems. Formation and propagation of modes and beams, matrix methods for the analysis and synthesis of optical systems. Prerequisite: ECE 331.

ECE 492/592**Laser Systems Design II (4)**

Interaction of light with atoms, Maxwell-Schrödinger analysis and rate equation approximations. Effects of gain, dispersion, and saturation in the design of laser amplifiers and oscillators. Recommended prerequisite: ECE 331.

ECE 501**Research (Credit to be arranged.)**

Consent of instructor.

ECE 503**Thesis (Credit to be arranged.)**

Consent of instructor.

ECE 504**Cooperative Education/Internship (Credit to be arranged.)**

Consent of instructor.

ECE 505**Reading and Conference (Credit to be arranged.)**

Consent of instructor.

ECE 506**Special Projects (Credit to be arranged.)**

Consent of instructor.

ECE 507**Seminar (Credit to be arranged.)**

Consent of instructor.

ECE 510**Selected Topics (Credit to be arranged.)**

Consent of instructor.

ECE 511/611, 512/612, 513/613**Solid State Electronics I, II, III (4, 4, 4)**

The solid state electronics course sequence deals with advanced topics in solid state device physics and modeling. Following a discussion on semiconductor properties and modeling as a function of doping and temperature, advanced bipolar transistor structures and MOS transistors will be treated in detail. Device models aimed at numerical circuit simulators will be discussed. Prerequisite: ECE 323.

ECE 523/623**Analog Integrated Circuit Design III (4)**

Integrated-circuit oscillators and timers, frequency-to-voltage converters, phase-locked-loop circuits, IC filters, self-tuning filters, digital-to-analog converters, analog-to-digital converters, CAD tools for circuit design and testing. Prerequisite: ECE 422/522.

ECE 527/627**High-performance Digital Systems (4)**

The use of computer-aided design tools in high-performance digital systems is explored. The trade-offs between automated and hand design are examined in the context of performance vs. development time. The impact of new developments in MOS circuit technology are also examined. Prerequisite: ECE 426/526.

ECE 529/629**Advanced VLSI Computer-Aided-Design (4)**

Introduces advanced, interconnect-centric, power-aware methodologies, techniques and algorithms for computer-aided design and optimization of VLSI circuits. It emphasizes analytical approach to design automation through the use of graph theory and mathematical optimization techniques. Vertical integration of different synthesis levels is discussed. Application of different analytical and heuristic techniques to physical design of VLSI circuits is studied in detail. We shall emphasize VLSI design issues encountered in deep sub-micron technology. Student group projects and project presentations introduce students to research and industry project requirements. Prerequisite: ECE 428/528.

ECE 530**Fault Tolerant Systems (4)**

Introduction to the design and analysis of dependable systems; study of failure modes in embedded and distributed computer systems and linear control systems; introduction to fault

detection, fault masking and fault recovery strategies; case studies of fault tolerant systems. Prerequisite: graduate standing.

ECE 533/633**Advanced Electromagnetics (4)**

Advanced course in electromagnetics. Mathematical methods, electrostatics, boundary value problems, magnetostatics, time varying fields, plane waves. Prerequisite: ECE 331.

ECE 538/638**Statistical Signal Processing I: Nonparametric Estimation (4)**

Unified introduction to the theory, implementation, and applications of statistical signal processing methods. Focus on estimation theory, random signal modeling, characterization of stochastic signals and systems, and nonparametric estimation. Designed to give a solid foundation in the underlying theory balanced with a discussion of the practical advantages and limitations of nonparametric estimation methods. Prerequisites: Mth 261 and ECE 565/665. Should have some proficiency at programming in MATLAB.

ECE 543/643**Electric Energy Systems Control (4)**

State estimation, security and contingency monitoring, automatic generation control, economic dispatch, optimal power flow, power system stability, unit commitment and pool operation. Prerequisite: ECE 442/542.

ECE 553/653**Control Systems Design III (4)**

Topics in modern feedback control theory of nonlinear and multivariable systems, including considerations of stochastic and optimal control. Design methods on computer workstations. Prerequisite: ECE 452/552.

ECE 559/659**Genetic Algorithms (4)**

Theory and applications of genetic algorithms. Study of the Schema and No Free Lunch theorems. Techniques for using genetic algorithms to solve multi-objective and NP-hard optimization problems from physical science, natural science, engineering and mathematical fields.

Investigation of game theory problems, co-evolution problems, and constrained parameter optimization problems. Introduction to classifier systems. Survey of current technical literature in evolutionary computation. Prerequisite: CS 163.

ECE 563/663**Information Theory (4)**

Established theoretical limits on the performance of techniques for compression or error correction of signals. This course focuses on communications applications, specifically source coding and channel coding for discrete signals. Topics will include: Entropy and Mutual Information, Asymptotic Equipartition (the Ergodic Theorem of Information Theory), Entropy Rates of Information Sources, Data Compression, and Channel Capacity. This course is also listed as SySc 545/645; may only be taken once for credit. Prerequisite: graduate standing.

ECE 565/665**Signals and Noise (4)**

Students are introduced to "noise" as it appears in communication and control systems, its mathematical and statistical properties and practical filtering methods to minimize its impact on systems. Advanced topics in filter and estimation theory are also introduced. Prerequisite:

graduate standing in electrical engineering. Prerequisite: ECE 223.

ECE 566/666**Digital Signal Processing (4)**

Study of discrete time signals and systems. Mathematics of discrete time systems in time and frequency domains. Discrete Fourier Transform, FFT algorithms and applications, digital filter design, random signals in digital linear systems form the foundations of this course. Prerequisite: ECE 565/665.

ECE 567/667**Statistical Communications Theory (4)**

As an advanced course in communication theory, topics of statistical decision, estimation, and modulation theory are introduced. Statistical aspects of transmission detection and error detection/correction schemes are covered. Prerequisites: ECE 461/561, 565/665.

ECE 568/668**Introductory Image Processing (4)**

Two-dimensional systems, image perception, image digitization (sampling and quantization), image transforms (Fourier, Cosine, K-L transforms), image enhancement (histogram equalization, filtering, spatial operation). Prerequisite: ECE 223.

ECE 569/669**Advanced Image Processing (4)**

Introduction to random fields, image representation by stochastic models, image restoration (Wiener and Kalman filtering), image coding and compression predictive and transform coding, vector quantization). Prerequisites: ECE 565/665, 568/668.

ECE 570/670**Computer Vision (4)**

Image detection and registration, image analysis (texture extraction, edge detection, segmentation), image reconstruction (radon transform, Fourier reconstruction), stereo imaging and motion analysis, pattern recognition (recognition, classification and clustering). Prerequisite: ECE 568/668.

ECE 572/672**Advanced Logic Synthesis (4)**

Boolean and multivalued algebras. Cube calculus and its computer realization. Basic operators and algorithms of function minimization. Decomposition and factorization theories. Multilevel minimization. Orthogonal expansions and tree circuits. Cellular logic and its applications to Field Programmable Gate Arrays. Spectral theory of logic optimization. Ordered Binary and Multiple-Valued Decision Diagrams. Design for speed, testability, power consumption, reliability, Reed-Muller forms, and EXOR circuits. Technology mapping. Modern logic synthesis programs, systems, and methodologies. Project that continues in ECE 573. Prerequisite: ECE 271.

ECE 573/673**Control Unit Design (4)**

Synchronous logic. Finite State Machines: and Moore and Mealy models. Design of FSMs from regular expressions, nondeterministic automata, Petri Nets and parallel program schemata. Partitioned control units. Cellular automata. Realization, minimization, assignment and decomposition of FSMs. Partition and decomposition theory and programs. Micro-programmed units. Microprogram optimization. Theory and

realization of asynchronous, self-timed and self-synchronized circuits. Project continuation.
Prerequisite: ECE 572/672.

ECE 574/674
High-level Synthesis and Design Automation (4)

Comprehensive design automation systems. Problems of system and high-level synthesis. Register-transfer and hardware description languages. Data path design: scheduling and allocation. Design methods for systolic, pipelined, cellular and dynamic architectures. System issues. System-level silicon compilers. Group project: using high-level tools for design of a complete VLSI ASIC chip or FPGA architecture: vision, DSP, or controller. Prerequisite: ECE 573/673.

ECE 575/675
Introduction to Integrated Circuit Test (4)

Course will cover the traditional role of IC test in parametric and functional testing and the changing role of IC testing in semiconductor design and manufacturing. The course is divided into three parts. The first part reviews integrated circuit technologies and fault modeling. The second introduces digital IC test, DC parametric testing, and functional and structural testing. The third part examines technology trends. Prerequisite: ECE 425/525, ECE 416/516.

ECE 576/676
Computational Methods in Electrical Engineering (4)

Students are introduced to advanced mathematical techniques applicable to electrical engineering. Content includes topics such as: optimization techniques, solution of partial differential equations, solution of eigenvalue problems, Fourier methods, vector space operations, and complex variable theory. Additional mathematical topics will be introduced as application examples at the discretion of the instructor. Prerequisite: graduate standing.

ECE 577/677
Interactive Computer Graphics (4)

An introduction to the principles of interactive computer graphics including logical devices, physical devices, transformation, viewing and clipping in two and three dimensions. Prerequisite: ECE 575/675.

ECE 582/682
Formal Verification of Hardware/Software Systems (4)

Objective is to introduce the main formal verification methods of hardware/software systems. Topics to be covered include: formal logics for system verification (first-order logic, higher-order logic, temporal logic), formal specifications, theorem proving systems, microprocessor verification, and system software verifications. Prerequisite: ECE 371, or CS 321, 333.

ECE 587/687
Advanced Computer Architecture I (4)
An advanced course in computer system architecture and design. Key topics include advanced CPU implementation techniques including pipelining, dynamic instruction issue, super-scalar architectures, and vector processing; high-performance memory and IO systems design; an introduction to parallel computers; and a survey of current literature in computer architecture and of current advanced computer systems. Students will begin a project that will be completed in ECE 588/688. Prerequisite: 486/586.

ECE 588/688
Advanced Computer Architecture II (4)
Discussion of parallel computer architectures and their uses. Key topics include MIMD architectures; associative processing; shared-memory and message-passing architectures; dataflow and reduction architectures; special-purpose processors; design and analysis of interconnection networks; and an overview of parallel software issues. Students will complete the project started in ECE 587/687. Prerequisite: ECE 587/687.

ECE 589/689
Performance Analysis of Local Area Networks (4)

Studies the structure and performance of local computer networks. Emphasis on performance issues for common protocols used in local computer networks, specifically, polling networks, rings networks, and random-access networks. Allows the student to analyze network performance and read the current literature.

ECE 590/690
Digital Design Using Hardware Description Languages (4)

An introductory graduate class to digital design using hardware description languages and to advanced digital design for programmable devices. Class covers the following topics: fundamentals of Hardware Description Languages; VHDL syntax and semantics; behavioral, functional, structural and register-transfer descriptions; combinational circuits; finite state machines; levels of system simulation; arithmetic and sequential blocks and interfaces; pipelined and systolic processors; advanced VHDL language features and extensions; specification of controllers and data path architectures; reconfigurable Field Programmable Gate Array systems; verilog for VHDL programmers. Students must complete two computer-based software mini-projects and a project. Prerequisite: graduate standing in ECE.

ECE 593/693
Advanced Laser Systems (4)

Transient phenomena in lasers including slow and fast pulsations and instabilities. Semiclassical and quantum mechanical effects on laser performance and applications. Recommended prerequisite: ECE 492/592.

ECE 594
Applied Optics (4)
An overview of optics and such principal applications as fiberoptics; chemical, biological, and physical sensors; optical information processing, acousto-optics; lasers and detectors. Recommended prerequisites: Ph 203 or 213 or 223, Mth 261. This course is the same as Ph 564; course may only be taken once for credit.

ECE 595/695
Optoelectronics I (4)
Techniques of optoelectronic systems including optical modulation, deflection, and detection. Anisotropic media, electro-optics, nonlinear optics, harmonic generation. Recommended prerequisite: ECE 331.

ECE 596/696
Optoelectronics II (4)
Nonlinear optics, parametric oscillation, frequency conversion, self-focusing, acousto-optics, Brillouin scattering, Raman scattering, magneto-optics, opto-optics. Recommended prerequisite: ECE 595/695.

ECE 598
Introduction to Quantum Mechanics (4)
An introduction to the formulation and application of wave mechanics; the Schrödinger equation and its application to time-independent problems (both one- and three-dimensional problems); identical particles; approximation methods including mainly time-independent perturbations. Brief exploration of the potential applications of quantum mechanics to engineering: quantum nano-structures and quantum computers. Recommended prerequisites: Ph 318 or 311, Mth 261. This course is the same as Ph 511; course may only be taken once for credit.

ECE 601
Research (Credit to be arranged.)

ECE 603
Thesis (Credit to be arranged.)

ECE 604
Cooperative Education/Internship (Credit to be arranged.)

ECE 605
Reading And Conference (Credit to be arranged.)

ECE 606
Special Problems/Projects (Credit to be arranged.)

ECE 607
Seminar (Credit to be arranged.)

ECE 610
Selected Topics (Credit to be arranged.)

ECE 635, 636, 637
Electromagnetic Fields and Interactions (4, 4, 4)

Classical description of the electromagnetic field: classical electron theory and plasmas. Prerequisite: ECE 331 or Ph 431. This course is the same as Ph 631, 632, 633; course may only be taken once for credit.

Engineering and Technology Management

EMgt 501
Research (Credit to be arranged.)

EMgt 503
Thesis (Credit to be arranged.)

EMgt 504
Cooperative Education/Internship (Credit to be arranged.)

EMgt 505
Reading and Conference (Credit to be arranged.)

EMgt 506
Special Projects (Credit to be arranged.)

EMgt 507
Seminar (Credit to be arranged.)

EMgt 510
Selected Topics (Credit to be arranged.)

EMgt 520/620
Management of Engineering and Technology (4)

Study of fundamental concepts of engineering and technology management to provide the students with an in-depth understanding of the underlying principles of this discipline. Innovation process, technological change, technical organizations, motivation and leadership theories applicable to engineers and scientists, engineering and RD projects, resource management in current and emerging technologies, and strategic management of technological system

interfaces are included in the course. Ongoing engineering management research is critically evaluated in classroom discussions. Case studies and a term project are included. Prerequisite: graduate standing.

**EMgt 522/622
Communication and Team Building in Engineering Management (4)**

Developing high performance teams for the engineering-driven companies; fundamental concepts that make an effective team; building a high-performance team; the keys to high performance; converting risks into assets; the power of commitment and discipline, and constructive communication; getting results through team dynamics, creative problem solving, and interactive exercises. Prerequisite: graduate standing or eligibility of admission to engineering management program.

**EMgt 525/625
Strategic Planning in Engineering Management (4)**

Critical issues in shaping the competitive strategy for the engineering-driven companies in a turbulent business environment; key steps and end results of the planning process; corporate mission; Key Result Areas (KRAs) and situational analysis including strengths, weaknesses, opportunities, and threats in KRAs. Identifying planning assumptions, critical issues, setting objectives, formulating strategy. Leadership, organizational culture, and structure to support the implementation of a strategic plan as well as the strategic control systems. Case studies, presentations, term projects, teamwork, and interactive exercises. Prerequisite EMgt 520/620.

**EMgt 530/630
Decision Making in Engineering and Technology Management (4)**

Decision and value theory concepts are applied to technical and management decisions under uncertainty. Multicriteria decisions are analyzed. Subjective, judgmental values are quantified for expert decisions and conflict resolution in strategic decisions involving technological alternatives. Hierarchical decision modeling approach is introduced. Individual and aggregate decisions are measured. Decision discrepancies and group disagreements are evaluated. Case studies are included in the course. Prerequisites: EMgt 520/620, knowledge of probability/statistics.

**EMgt 535/635
Engineering Economic Analysis (4)**

Economic evaluation of engineering and R&D projects is discussed from the engineering management viewpoint. Time value of money, tax considerations, break-even sensitivity analyses, project evaluations under uncertainty, risk sharing, capital budgeting, and multicriteria decisions are studied. Case discussions are included in the course prerequisite: Linear algebra, probability/statistics.

**EMgt 537/637
Productivity Analysis (4)**

Productivity analysis techniques, applications, and case studies are covered from engineering and management perspectives. Topics covered include benchmarking, process analysis, production functions, parametric productivity analysis techniques, and nonparametric productivity analysis techniques. Prerequisites: linear programming, probability/statistics.

**EMgt 540/640
Operations Research in Engineering and Technology Management (4)**

The use of operations research techniques in making engineering management decisions; application and interpretation of linear programming and goal programming; problem formulations; mathematical model building; the basic principles behind the simplex algorithm and multiple objective linear optimization; postoptimality analysis from the viewpoint of technology management; other operations research techniques such as queuing models; a term project involving an actual operational problem. Prerequisites: linear algebra and probability/statistics.

**EMgt 545/645
Project Management in Engineering (4)**

Critical issues in the management of engineering and high technology projects; analysis of time, cost, performance parameters from the organizational, people, and resource perspectives; project planning evaluation and selection, including project selection models; project and matrix organizations; project teams; scheduling with CMP/PERT algorithms; budget and schedule control; termination of projects Case discussions and term project are included in the course. Prerequisites: EMgt 520/620, EMgt 530/630.

**EMgt 546/646
Project Scheduling and Network Analysis (4)**

An-in-depth study and review of the major problems and analytical techniques used in the planning and scheduling of major industrial projects. Specific focus on two primary areas: (1) network analysis used in the planning of projects, and (2) scheduling analysis used in the scheduling of resources during the course of a project. Modeling techniques such as CPM/PERT, GERT, etc. in conjunction with mathematical programming and computer simulation. Emphasis on solving real-world project schedules. Prerequisites: probability/statistics, linear algebra, EMgt 545/645.

***EMgt 550/650
Manufacturing Systems Engineering (4)**

Underlying concepts of manufacturing or production systems; product and process planning; job/flow shops; group technology, and flexible manufacturing cells. Prerequisite: graduate standing or eligibility for admission to the engineering management program.

***EMgt 551/651
Manufacturing Systems Management (4)**

Traditional and emerging techniques in manufacturing management; the evolution of concepts from EOQ to MRP and JIT including what has gone wrong with them. Other management level issues including shop floor control, production scheduling, and inventory management. Prerequisite: EMgt 550.

**EMgt 552/652
Intelligent Manufacturing Systems (4)**

Introducing the student to applications of AI/expert system tools for solving manufacturing system design and management problems. First part of the course: Introduction of the basic concepts of intelligent manufacturing, knowledge-based (KB) techniques, and software used in the design of products, processes, facilities, and management systems required to manufacture a product. Second part: KB techniques and software used in the design of products,

processes, facilities, and management systems required to manufacture a product. Third part: Integration of KB techniques for designing an intelligent manufacturing system; current and future research in each of the functional areas. Prerequisite: EMgt 550/650.

**EMgt 553/653
Manufacturing Systems Simulation (4)**

Application of discrete system simulation to manufacturing processes, including production cells, assembly operations, materials handling, and scheduling. Students also learn general systems modeling concepts, such as how to model random processes and probabilistic events, and how to use a specific simulation package that features realistic animation of the system under study. Prerequisites: basic knowledge of probability and statistics, and some exposure to manufacturing processes and terminology. This course is the same as SySc 553/653; course may only be taken once for credit.

**EMgt 555/655
Technology Marketing (4)**

This course is designed to introduce students to the special issues faced by managers marketing technological products in markets characterized by rapid environmental change. Topics will include an examination of the marketing/engineering /manufacturing interface, product innovation strategies, value-based pricing, buyer behavior and strategic selling, competitive market analysis and positioning, and distribution strategies. Emphasis is placed on strategies for marketing technology products in industrial markets.

**EMgt 560/660
Total Quality Management (4)**

Critical principles and procedures of quality management in a competitive global environment; contemporary definitions of quality; quality in production/services; quality economics; quality philosophies; planning, organizing, and controlling for quality; human resource and empowerment strategies, and QC tools. Case studies, presentations, term projects, and teamwork. Prerequisite: graduate standing, or eligibility of admission to the engineering management program.

**EMgt 563/663
Re-engineering the Technical Enterprise (4)**

This course presents the critical issues in re-inventing the engineering-drive companies in the real world. The basic building blocks, re-engineering stages and key success factors are covered. Also reviewed are the tools, challenges, and resistance to re-engineering. Case studies, presentations, term projects, and teamwork are included in the course. Prerequisite: EMgt 560/660.

**EMgt 565/665
Research Methods for Engineering Management (4)**

Research methods in engineering management; statistical techniques including proper selection, use, and interpretation of parametric and non-parametric tests along with factor and discriminant analysis. Design of experiments and model misspecification. The use of statistical software. Prerequisites: graduate standing, probability and statistics.

***EMgt 571/671
Expert Systems in Engineering (4)**

Insights into artificial intelligence exposing students to the building of expert systems (ES)

with an emphasis on solving a variety of engineering management problems; components of ES and an emphasis on solving a variety of engineering management problems; components of ES and design methodology; principles of heuristic and logic programming; fundamental issues related to knowledge acquisition, representation, inferencing, and learning; design of inference engines and their implementation. Fuzzy reasoning, neural nets, and learning mechanisms and a review of some of the more popular AI and ES shells.

EMgt 589

Capstone Project (4)

Capstone project for the M.S. degree in engineering management; can be taken in lieu of master's thesis or EMgt 590 to satisfy curriculum requirements. Students conduct individual research on a project approved by the faculty member who supervises the work. Findings are presented in the form of a report after being accepted by the supervising professor. Prerequisites: EMP core.

EMgt 590/690

Engineering Management Synthesis (4)

This is the capstone course in the Engineering Management Program. It synthesizes the concepts and methodologies of engineering and technology management into an individual or group project. The research base for the project may come from any combination of the study areas covered in the Engineering Management Program.

EMgt 601

Research (Credit to be arranged.)

EMgt 604

Cooperative Education/Internship (Credit to be arranged.)

EMgt 605

Reading and Conference (Credit to be arranged.)

EMgt 606

Special Problems/Projects (Credit to be arranged.)

EMgt 607

Seminar (Credit to be arranged.)

EMgt 610

Selected Topics (Credit to be arranged.)

Software Engineering

OMSE 500

Principles of Software Engineering (3)

An introduction to software engineering in industry. This course focuses on understanding the nature of software engineering, the software engineering process, and the problems and solutions manifest in real software development and modification projects. Different models of the software engineering process are compared and contrasted. Current best practices in software engineering and various approaches to software process improvement are presented. Two years of software development experience is required for registration.

OMSE 511

Managing Software Development (3)

Provides the knowledge and skills needed to plan, organize, lead, and control a software project. Topics include planning and estimating, measuring and controlling, and leading and directing a software project. Quantitative measures and risk management will be emphasized throughout the course. Students will prepare project plans for real or hypothetical software

projects, to include effort, cost, and schedule estimates and risk management plans. Two years of software development experience is required for registration.

OMSE 513

Professional Communication Skills for Software Engineers (3)

Covers the skills necessary for appropriate professional conduct and effective communication in a professional setting. It includes technical writing, making effective presentations, conducting effective meetings, conflict resolution, team and decision-making skills, and professional ethics. Students will engage in a project that covers the major topics of the course. Two years of software development experience is required for registration.

OMSE 521

Using Metrics and Models to Support Quantitative Decision Making (3)

Provides the knowledge and skills needed to apply quantitative tools based on metrics and models of the software product and development process to make decisions under uncertainty. Topics covered will include measurement concepts, decision-making under uncertainty, and model and metric development for the software development enterprise. Foundation coursework is required for registration.

OMSE 522

Modeling and Analysis of Software Systems (3)

Abstract models are used to formalize specifications of software systems. Formalized reference specifications serve as a basis for the design of software implementations and for validating critical properties of software systems. Provides the fundamental mathematical concepts needed to understand abstract models of software and to reason about them. Foundation coursework is required for registration.

OMSE 525

Software Quality Analysis (3)

Processes, methods, and techniques for developing quality software, for assessing software quality, and for maintaining the quality of software. Tradeoffs between software cost, schedule time, and quality. Integrating quality into the software development process; formal review and inspection methods; principles of testing and test planning; module design for testability; maintaining quality while supporting existing software. Two years of software development experience is required for registration.

OMSE 531

Software Requirements Engineering (3)

Principles, tools, and techniques for requirements elicitation, specification, and analysis. Focus on understanding the role of requirements in the development process, goals of the requirements phase, essential difficulties of specifying requirements for real systems, and effective methods, tools, and techniques. Covers techniques for formally modeling and specifying software requirements with hands-on experience. Two years of software development experience is required for registration.

OMSE 532

Software Architecture and Domain Analysis (3)

Methods and principles of the architectural design of complex, large-scale software systems

to accommodate change and evolution through many product releases or versions. Survey of the major architectural styles, their strengths and weaknesses, and architectural trade-offs with respect to system goals and desired properties. Study of architectural approach to development of open systems and frameworks based on case studies. Software engineering of domain-specific software architectures for families of systems (e.g., product lines) including domain analysis, domain modeling, and design of domain-specific software architectures. Relation of software architecture to requirements and its effects on downstream design and software evolution. Students examine domain analysis and the architectural design process and products in the business context including the effect of decisions on cost and schedule. Foundation coursework is required for registration.

OMSE 533

Software Design Techniques (3)

Covers the principles of software design and a survey of design methods, techniques, and tools. In-depth and hands-on study of at least one method such as object-oriented design as applied to a realistic industrial problem. Examines the effects of design decisions on the functional and non-functional properties of the software (e.g., ease of understanding, maintainability, and reuse) and how software engineering principles are applied to make appropriate trade-offs. Also examines the design process and products in context including the effect of design decisions on function, quality, cost, and schedule. Foundation coursework is required for registration.

OMSE 535

Software Implementation and Testing (3)

Covers the principles of implementing and verifying computer software. Implementation topics include coding style, packaging principles, reuse, testability, and maintainability. Verification topics include structural (white box) testing and techniques for code verification. Also included will be verification and integration of foreign code; testing techniques and how to apply them; including code-based and specification-based testing; hands-on application of the testing process including test case generation; and test adequacy, test validation, test execution, and automation. Foundation coursework is required for registration.

OMSE 551

Strategic Software Engineering (3)

Where traditional software engineering focuses on the development and maintenance of individual systems, strategic software engineering addresses the development of multiple systems over time. Significant gains in productivity, cost, and schedule can result from systematic improvement of the software development process and systematic reuse of life-cycle products over multiple developments. Covers the principles, methods, and tools for strategic software development including process modeling and improvement, developing programs as families of systems, and systematic approaches to code generation and the reuse of non-code products, including requirements and design. Prerequisites: All previous OMSE courses.

OMSE 555/556**Software Development Practicum I, II (3, 3)**

In the practicum courses, students apply skill gained in the foundation and context courses to synthesize a solution to a real software development problem. Students work in teams to analyze a problem, develop a software concept, plan a software development effort, define requirements, and implement a solution. Students will work closely with OMSE program faculty and, where possible, industrial reviewers to apply advanced software engineering techniques to a disciplined development of a realistic product and evaluate the results. Prerequisites: All previous OMSE courses.

Mechanical Engineering

ME 199**Special Studies (Credit to be arranged.)**

Consent of instructor.

ME 241**Manufacturing Processes (4)**

Study from the designer's viewpoint of the principal manufacturing processes utilized. Includes casting, forming, material removal, and joining processes. Process selection will be discussed in terms of the economics, process effects on the products, and dimensional and quality of the finished product. Lecture and laboratory. Prerequisite: EAS 213.

ME 304*Energy and Society (4)**

Study of the energy problem: a complex societal problem which has a major technical component. Designed to help nonscience majors understand the technical side of the energy problem as well as the multidisciplinary effects of technical decisions on the social, political, and economic framework. Examination of energy requirements and usage, energy resources, methods for producing energy, environmental and economic implications of energy production, energy conservation, and energy policies. Power production techniques utilizing coal, nuclear, solar, wind, geothermal, and other energy sources will be studied. Prerequisite: upper-division standing.

ME 313**Analysis of Mechanical Components (4)**

Stress and deflection analysis of structural components including review of stress and strain; curved beams; pressure vessels, impact loading, stability, and energy methods. Topics will be synthesized in a design project. Prerequisites: EAS 212, Mth 261.

ME 314**Analysis and Design of Machine Elements (4)**

Analysis and design of machine elements and systems, covering failure theories, fatigue, fasteners, welds, gears, springs, bearings, introduction to stochastic design. Topics will be synthesized in a design project. Prerequisite: ME 313.

ME 321**Engineering Thermodynamics I (4)**

Study of energy sources and utilization; First and Second Laws of thermodynamics; closed and control volume systems; thermodynamic processes and cycles; thermodynamic properties; heat power systems; Prerequisites: Ph 223, Mth 253.

ME 322**Applied Fluid Mechanics and Thermodynamics (4)**

Internal flow, external flow, and compressible flow. Lift and drag. Turbomachinery, combustion, and psychometry. Prerequisites: EAS 361, ME 321.

ME 323**Heat Transfer (4)**

Fundamentals of engineering heat transfer with design applications; steady-state and transient analysis of conduction in one and two dimensions; concepts of convection, forced convection, internal and external flows, natural convection, and heat exchanger design; study of radiation concepts and radiation exchange between surfaces. Prerequisites: Mth 261, ME 321, EAS 361.

ME 351**Vibrations and System Dynamics (4)**

An introduction to vibrations and system dynamics for single and multiple degree-of-freedom linear systems. The course includes: free and forced vibrations; resonance; modeling of mechanical, fluid, and electrical systems; Laplace transformations; and dynamic system response in the time and frequency domains. Computer analysis and solution techniques will be utilized. Prerequisites: EAS 215, Mth 261, EAS 361, ECE 221, ME 352.

ME 352**Numerical Methods in Engineering (4)**

Introduction to numerical methods used in engineering. Topics include: number representation and truncation errors, integration, differentiation, interpolation and approximation, linear system of equations, non-linear equations, and solution of differential equations. Prerequisites: EAS 101, Mth 261.

ME 401**Research (Credit to be arranged.)**

Consent of instructor.

ME 403**Honors Thesis (Credit to be arranged.)**

Consent of instructor.

ME 404**Cooperative Education/Internship (Credit to be arranged.)**

Consent of instructor.

ME 405**Reading and Conference (Credit to be arranged.)**

Consent of instructor.

ME 406**Special Projects (Credit to be arranged.)**

Consent of instructor.

ME 407**Seminar (Credit to be arranged.)**

Consent of instructor.

ME 410**Selected Topics (Credit to be arranged.)**

Consent of instructor.

ME 411/511**Engineering Measurement and Instrumentation Systems (4)**

Principles and applications of measurement methods and instrumentation techniques, as used in various engineering disciplines, are studied. Examination of general measurement concepts and instrumentation characteristics. Specific devices for measuring such parameters as displacement, force, strain, pressure, flow,

temperature, motion, time, and frequency are discussed. Testing and verification of theory, design, and laboratory evaluation of mechanical components and systems are also made. Lecture and laboratory. Prerequisites: ECE 221, senior standing in engineering.

ME 413/513*Engineering Material Science (4)**

Study of materials with emphasis on solids; effect of microstructure and macrostructure on properties; equilibrium and non-equilibrium multiphase systems; effects of mechanical and thermal stresses, electromagnetic fields, irradiation, and chemical environments, surface and related phenomena; examples from metallic, ceramic, polymeric, and composite materials. Prerequisite: EAS 213.

ME 415/515*Advanced Topics in Energy Conversion (4)**

Topics chosen for relevancy to current technological practice concerned with energy conversion. Examples include cogeneration, combined cycles, gas power plants in the Northwest, wood waste utilization, advanced engine design and combustion systems, and energy conversion systems pollution control. Each offering of this course will focus on a different single selected topic.

ME 416/516*Internal Combustion Engines (4)**

Chemical equilibrium, fuel chemistry and properties, thermodynamics of combustion reactions, engine processes as ideal engine cycles, engine combustion processes, engine performance, engine simulation, and vehicle emissions. Prerequisites: ME 322, ME 323, EAS 361.

ME 417/517*Gas Turbines (4)**

Introduction to the thermodynamic analysis of the performance of gas turbine engines. Study of gas turbines for rotary power output as well as aircraft propulsion. Rotary power analysis focuses on the different gas turbine cycles, including combined cycles. Aircraft propulsion analysis focuses on turbojets, turbofans, turboprops, ramjets, and advanced concepts. Prerequisite: ME 322.

ME 418/518*Analysis of Powerplant Cycles (4)**

Review of thermodynamic cycle analysis for power generation systems. Advanced treatment of conventional Rankine and gas turbine powerplant cycles. Analysis of advanced energy conversion cycles and schemes, including combined cycles, binary cycles, cogeneration, and fluidized bed reactors. Application to power generation such as geothermal electric and solar thermal electric. Utilization of garbage and wood wastes. Project required. Prerequisites: ME 322 or equivalent and consent of instructor.

ME 420/520**Thermal Systems Design (4)**

Introduction to the design of thermal systems for HVAC, energy conversion, and industrial process applications. Procedures for selection of fluid flow equipment, heat exchangers, and combustion equipment. Modeling performance of components and systems. Cost estimation and economic evaluation. Design optimization. Prerequisites: ME 323, EAS 361.

ME 421/521**Heating, Ventilating, and Air Conditioning Design Fundamentals (4)**

Fundamental principles and methods of controlling living space environments; design of heating, ventilating, air conditioning, and refrigeration systems for residential, commercial, and industrial purposes. Topics include: moist air properties (psychometrics), air conditioning processes, indoor air quality (comfort and health), heat transmission in building structures, solar radiation, space heating and cooling load analysis, energy calculations, and air conditioning systems and equipment. Prerequisite: ME 323.

ME 422/522*Building Energy Use Analysis and Design (4)**

A detailed examination of the analysis of annual energy use of residential and commercial buildings. Emphasis on microcomputer simulation techniques for analysis of building energy use and study of energy-efficient building design. Topics include: heat loss and gain in buildings, heating and cooling load calculations, energy use analysis (including bin type, daily, and hourly analysis procedures), daylighting in commercial buildings, and introduction to analysis and design of active and passive systems utilizing solar energy for space and water heating. Project in design/simulation. Prerequisites: ME 323, ME 421/521, familiarity with use of computers and spreadsheets.

ME 423/523*Fundamentals of Building Science (4)**

Introduction to the fundamental concepts of building science. Buildings as a system, including interactions among subsystems such as heating and cooling, ventilation, the thermal envelope, air leakage, and occupants. Building energy efficiency. Performance and economic analysis of residential heating, cooling, and ventilating systems. Indoor air quality and other health and safety issues, including assessing and resolving moisture problems. Applications of diagnostic tools. Lecture plus in-field demonstration and laboratory. Group project involving diagnostic analysis of student homes. Prerequisite: ME 421/521.

ME 424/524**HVAC System Design and Controls (4)**

Design of HVAC equipment, integration of systems, and design of controls for buildings. Application of HVAC fundamentals. Subjects include: building, block and zone load estimates; air/hydronic systems design; refrigeration; air handling units; cooling and heating plants; basic control concepts; sensors and actuators; pneumatic, electronic, and digital controls; HVAC subsystem and controls; complete HVAC systems and controls. Prerequisites: ME 421/521 and 351.

ME 425/525*Advanced Topics in Building Science (4)**

Advanced design or analysis topics will be presented. Topics will be chosen for relevancy to current technological practice concerned with building science. Examples include clean room design, advanced computer simulation techniques such as advanced building energy use simulation or attic and wall moisture modeling, and advanced lighting design for commercial buildings. Each offering of this course will focus on a different single selected topic.

ME 431/531**Pneumatic and Hydraulic Systems (4)**

Fluid control and fluid power devices and components; application of Boolean algebra in control circuit design; fluid power circuit analysis; design methodology; component selection, system maintenance, and troubleshooting. Prerequisite: EAS 361.

ME 437/537*Mechanical Systems Design (4)**

Objective of this course is to integrate various analysis methods in the context of design projects with realistic constraints. Emphasis is on defining problems, identifying solution methods, and synthesizing solutions while considering production and economic factors. Teamwork, communication skills, and ability to learn independently is highly emphasized. Prerequisites: ME 241, 351, 314.

ME 441/541*Advanced Fluid Mechanics (4)**

Partial differential equations governing the conservation of mass, momentum, and energy of Newtonian fluids are derived. Dimensional analysis is used to simplify the governing equations and in particular justify the assumption of incompressible flow. Exact solution of the Navier-Stokes equations are presented. Boundary layer approximations to the governing equations are derived, and both exact and integral solutions are obtained. Prerequisite: EAS 361.

ME 442/542*Advanced Heat Transfer (4)**

Advanced treatment of the principles of conductive and convective heat transfer. Analytic and numerical solutions of heat conduction problems. Laminar and turbulent convective heat transfer. Prerequisites: ME 322, 323.

ME 443/543*Advanced Engineering Thermodynamics (4)**

Thermodynamics of physical and chemical systems with engineering applications: basic thermodynamic relationships; advanced techniques for their use; systems of variable composition; heat effects for reacting systems; equations of state, phase, and chemical equilibria for ideal and nonideal systems. To include one or more of several special topics: chemical kinetics; reactor analysis fundamentals; second law analysis of thermodynamic systems; introduction to statistical thermodynamics; advanced energy conversion systems. Prerequisite: ME 321.

ME 444/544*Combustion (4)**

Fundamental concepts of the complex phenomena involved in combustion: thermodynamics, fluid mechanics, gas phase chemical kinetics and turbulence. Specific topics include: closed vessel explosions, detonations, flammability, flames, heterogeneous combustion, ignition, and combustion and the environment. Prerequisites: ME 322, 323.

ME 445/545*Advanced Topics in Thermal and Fluid Sciences (4)**

Course topics are chosen for relevancy to current technological practice concerned with thermal and fluid sciences. Each offering of this course focuses on a specific area and is not a survey. Examples include thermal management of electronic equipment and theoretical fluid mechanics.

ME 446/546*Compressible Flow (4)**

Introduction to compressible flow (gas dynamics). Isentropic flow in varying area ducts (nozzles, diffusers). Adiabatic flow in constant area ducts with friction. Frictionless flow in constant area ducts with heat transfer. Normal, oblique, and moving shock waves. Detonation and deflagration. Applications. Prerequisites: ME 322, EAS 361.

ME 447/547*Transfer and Rate Processes (4)**

An advanced treatment of heat, mass, and momentum transfer. Development of the conservation laws, transport laws, transport properties, and basic analytic solutions. Applications to heat transfer equipment, catalytic reactors, drying processes. Prerequisites: ME 323, EAS 361, senior or graduate standing.

ME 448/548*Applied Computational Fluid Dynamics (4)**

Computational fluid dynamics (CFD) is presented as a design tool for analyzing flow and heat transfer. Algorithms implemented in commercial CFD packages are reviewed. Training in use of a commercial code is provided. Case studies reinforce fundamental understanding of flow and heat transfer, and highlight the implementation-specific aspects of commercial codes. An independent project is required. Prerequisite: ME 441/541.

ME 449/549**Thermal Management Measurement (4)**

Provides a survey of laboratory-based techniques used to diagnose electronic cooling problems, and to obtain design data for developing thermal management solutions. Provides significant practical experience: students design and build their own experiments; they take and analyze their own data. Measurements are made with hand-held instruments, bench-top instruments, and with computer controlled data acquisition systems. Data reduction techniques involving centering (removal of bias error) and uncertainty analysis are used extensively. Lecture and laboratory. Prerequisites: ME 323, 411.

ME 450/550**Solid Modeling (4)**

Emphasis is on solid model construction methods using state-of-the-art solid modeling software. Topics include use of parametric geometry, construction and modification of solids, building and animating assemblies, working in groups, building sheet metal parts, drafting, and the presentation of the fundamentals of solids modeling including representation and manipulation of wireframes, surfaces, and solids. Lecture and laboratory. Prerequisite: senior or graduate standing in engineering or a closely related field.

ME 452/552**Control Engineering I (4)**

Introductory controls class offered to upper-division mechanical engineering undergraduates and graduate students. Includes classical theory as applied to linear systems with topics: mathematical modeling of control systems; transfer functions and block diagrams; transient response; stability; root-locus method; frequency response method; and control system design techniques. Computer analysis and solution techniques will be utilized. Prerequisites: upper-division ME undergraduate or graduate student; Mth 256; ECE 221; ME 351.

**ME 453/553
Control Engineering II (4)**

Continuous control system design and applications using transfer function and state variable approaches. Introduction to digital control system design, including: transfer function and state space formulation, and time and frequency domain analysis techniques. Computer analysis and solution techniques will be utilized. Prerequisite: ME 452/552.

**ME 455/555
Finite Element Modeling and Analysis (4)**

The finite element method as related to the solution of mechanical design problems including thermal stress analysis. Various element formulations will be discussed, and existing commercial codes will be used to demonstrate modeling and analysis techniques. Prerequisite: ME 455: ME 314; ME 555: graduate standing in engineering.

***ME 457/557
Introduction to Robotics (4)**

Robot kinematics dynamics and control; basic components of robots: controllers, power supplies and end effectors; industrial applications of robots using peripheral devices, sensors, and vision. Prerequisite: ME 351.

***ME 458/558
Principles Of CNC Machining (4)**

A study of principles of machining, tool path generation and analytic geometry, part design and programming, integration of CAD/CAM software, structure and control of CNC machines, and introduction to computer-integrated-manufacturing. Prerequisite: ME 241 and senior standing in mechanical engineering. Lecture and laboratory. Prerequisites: ME 241 and senior standing in mechanical engineering.

***ME 463/563
Advanced Topics in Control Engineering (4)**
Mathematical foundations and applications of various advanced topics in control engineering for both continuous- and discrete-time systems. Prerequisite: ME 453/553.

**ME 471/571
Process Measurement and Control (4)**
Introduction to process control hardware, software, and interfacing. Lecture topics include: number systems, hardware concepts, data movement, programming, and interfacing. Lab exercises involve the use of microcomputers interfaced and programmed for various control and data acquisition applications. Lecture and laboratory. Prerequisites: ME 411/511; ECE 201, 221.

**ME 475
Joining Processes and Design (4)**
Course covers welding, brazing, and soldering processes such as: shielded metal arc, gas metal arc, pulsed gas metal arc, flux cored arc, gas tungsten arc, plasma arc, submerged arc, electroslag, resistance, gas, and older welding processes; diffusion brazing, transient liquid phase bonding, wave soldering, reflow soldering, and others. Manual, automatic, and robotic methods of welding, brazing, and soldering. Rapid and economical cutting methods such as plasma, laser, and oxy-fuel cutting. Welding design with steel, stainless steel, and aluminum alloys will be emphasized. Design of joints to provide economy, strength, and crack resistance. Heat flow calculations in welding; preheat calculations and other crack-preventing calculations will be utilized. Welding codes will be covered. Prerequisite: ME 241.

**ME 476
Materials Failure Analysis (4)**
Fundamental mechanisms related to failure of metal and alloys used in engineering structures. Mechanisms include: ductile and brittle fracture, fatigue, corrosion fatigue, wear, liquid erosion, stress corrosion, hydrogen-assisted cracking, elevated temperature failures, and many others. Analytical tools used to identify types of failures including: optical metalography, scanning electron microscopy, secondary ion mass spectroscopy, electron probe microanalysis, X-ray photoelectron spectroscopy, Auger electron spectroscopy, and others. Ductile, brittle, intergranular, cleavage, quasi-cleavage, and microvoid coalescence modes of fracture are discussed. Failures in weldments, brazed and soldered joints, castings, bearings, boilers, forgings, pipelines, bridge components, gears, springs, wear components, tools, and dies. Prerequisite: ME 314.

***ME 481/581
Mechanical Tolerancing (4)**
Presents the principles of current dimensioning and tolerancing standards including their syntax, meaning, methods of verification, and their relation to design requirements. Statistical techniques for tolerance analysis and synthesis relevant to various assembly and fit requirements. Other topics include standards of surface roughness, limits and fits, and relevant hardware and software products. A term project on a mechanical part product intended for manufacturing is required. Prerequisites: ME 241, 491 concurrently.

**ME 488
Design of Experiments (2)**
Presents the methods of planning the data collection scheme in industrial experimentation. Topics to be covered are methods of statistical inference, randomization, blocking, empirical and mechanistic model building using factorial, fractional factorial designs, and least squares methods. Prerequisite: Stat 460.

**ME 491
Design Process (2)**
Design methodologies will be discussed as a framework for solving broadly defined technology problems. Interdisciplinary organizational principles will be presented as tools in the design process and as a foundation for the subsequent project course. Lectures, weekly and term case studies. Prerequisites: ME 314, ME 351.

**ME 492
Conceptual Design Project (4)**
Application of design methodology to original projects performed by groups of 3 to 5 students under faculty and industrial adviser. Design process will encompass engineering analysis and broader factors such as group organization, interdisciplinary interaction, and communication. The problem definition to alternative selection phases will be emphasized. Lectures, group, and class presentations. Prerequisite: ME 491.

**ME 493
Detailed Design Project (4)**
Application of design methodology to original projects begun in ME 492. The alternative selection to implementation phases will be emphasized. Lectures, group and class presentations. Prerequisites: ME 492.

**ME 501
Research (Credit to be arranged.)**
Consent of instructor.

**ME 503
Thesis (Credit to be arranged.)**
Consent of instructor.

**ME 504
Cooperative Education/Internship (Credit to be arranged.)**
Consent of instructor.

**ME 505
Reading and Conference (Credit to be arranged.)**
Consent of instructor.

**ME 506
Special Projects (Credit to be arranged.)**
Consent of instructor.

**ME 507
Seminar (Credit to be arranged.)**
Consent of instructor.

**ME 510
Selected Topics (Credit to be arranged.)**
Consent of instructor.

***ME 512/612
Advanced Vibrations (4)**
Vibration analysis of single and multiple degree of freedom systems. Topics include: (1) modeling of linear systems using matrix methods; (2) modal analysis; (3) general forcing and Fourier series methods; (4) random and self excited vibrations; (5) nonlinear vibrations. Prerequisite: ME 351.

***ME 532/632
Turbomachinery (4)**
Application of thermodynamics and fluid mechanics principles to the analysis and design of various types of turbomachinery, including pumps, fans, compressors, and turbines. An advanced unified treatment is presented. Theory, operation, performance, use, and selection of turbomachines are discussed. Prerequisites: ME 322, 331.

**ME 551/651
Engineering Analysis (4)**
Application of mathematical techniques to the solution of controls, dynamics, mechanical, and transport phenomena problems. Emphasis given to modeling, physical interpretation, and normalization. Topics include modeling, linear systems, partial differential equations, and complex variables. Prerequisite: graduate standing.

***ME 554/654
Integrated Computer-aided Design (4)**
Presents several design analysis computer programs in an integrated fashion. Topics include geometric modeling, motion simulation, and finite element analysis. Emphasizes the understanding of the fundamentals, proper use of programs, and interpretation of results. Prerequisites: EAS 215, ME 314.

***ME 562/662
Engineering Numerical Methods (4)**
Numerical methods applied to engineering problems. Coverage includes interpolation, integration, root solving, solution of boundary value and initial value problems, solution of linear systems. Programming will include Fortran or C, MATLAB and Maple. Prerequisites: ME 352.

***ME 565
Advanced Finite Element Applications (4)**
Discussion and implementation of advanced element types and modeling techniques in finite element analysis; topics include plate and shell elements, non-linear problems (geometric, materials, and gap/contact), frequency and

buckling, thermal conduction, and steady-state flow problems. Implementation of the above topics using available commercial finite element analysis codes. Prerequisite: ME 455/555.

***ME 588/688**

Design of Industrial Experiments (4)

Presents the statistical basis of industrial experimentation used in process and design improvement. Topics include model building, randomized and blocked designs, Latin squares, analysis of variance, factorial designs, fractional factorial designs, time series analysis, and evolutionary operations. Prerequisite: Stat 460.

***ME 596/696**

Design Optimization (4)

Application of Numerical Optimization techniques to engineering design process. Mathematical theory of optimization and application problems in structural and machine component design will be discussed. The course involves computer-aided design optimization projects. Prerequisite: graduate standing in engineering.

ME 601

Research (Credit to be arranged.)

Consent of instructor.

ME 603

Thesis (Credit to be arranged.)

Consent of instructor.

ME 604

Cooperative Education/Internship (Credit to be arranged.)

Consent of instructor.

ME 605

Reading and Conference (Credit to be arranged.)

Consent of instructor.

ME 606

Special Projects (Credit to be arranged.)

Consent of instructor.

ME 607

Seminar (Credit to be arranged.)

Consent of instructor.

ME 610

Selected Topics (Credit to be arranged.)

Consent of instructor.

Materials Science and Engineering

MSE 513

Engineering Design for Materials Scientists (4)

Application of engineering design principles to materials problems: problem definition, design methodology, design philosophy, and practice. Introduction to fundamentals of machine design, mechanical models, mechanical systems. Required course for materials science and engineering students without an engineering background. Prerequisite: graduate standing.

MSE 515

Material Testing Methods (4)

Discussion and application of techniques for materials scientists including image analysis, thermal-physical analyses, fracture, and weldability testing. Lecture and laboratory. Prerequisite: graduate standing.

MSE 547

Diffusion (4)

The mathematics, physics, and applications of diffusion theory in materials science. Topics include carburization, nitriding, and sensitization of metals; oxidation and ion implant in semiconductors, and polymer diffusion. Prerequisite: Mth 261, EAS 213, graduate standing.

Systems Engineering

SysE 561

Logistics Engineering (4)

Concentrates on logistics from a systems engineering perspective. Systems will include a mix of products and processes, materials, equipment, software, people, data, information, and services, within some form of hierarchy. The design for supportability/serviceability, the production and effective distribution for customer use, and the sustaining maintenance will be addressed on a total system life-cycle basis, with particular emphasis in the early phases of the development of new systems and/or reengineering of existing systems. Prerequisite: basic knowledge of systems engineering concepts and statistics.

SysE 573

Requirements Engineering (4)

Students gain knowledge to translate needs and priorities into system requirements that are the starting point for the engineering of complex hardware/software systems. Topics include: larger context in which requirements for a system are developed; developing mission needs or market opportunities first versus assessing available technology first; translating needs and priorities into an operational concept and then into specific functional and performance requirements; assessment of requirements, including such aspects as correctness, completeness, consistency, measurability, testability and clarity of documentation; relationship between interface definitions and requirements; risk management of requirement issues, and stakeholders input to increase the prospects for project success. Case studies will be used, many provided by students and involving software-intensive systems. Recommended prerequisite: SysE 591.

SysE 575

Reducing Risk in Decision Making (4)

Examines the concepts, techniques and tools for managing risk and making decisions as key components of the systems engineering process. Risk connotes a measure of the probability and severity of an undesired event. Begins with an

overview of the risk management (identifying, assessing, monitoring, and mitigating) and decision process. Differences between mission critical and non-mission critical programmatic risk emphasized. Other topics include the limits of expected value-based risk analysis, decision making strategies such as max/min, min/max and regrets. Formal methods in risk analysis, elementary decision analysis and decision trees, multi-objective decision making, pareto techniques, optimality, and trade-off analysis will be covered. Risk and decision techniques contrasted with the interfacing processes of program management and software engineering, from both the government and industrial perspectives. Prerequisite: experience with systems engineering process.

SysE 590

Integrative Workshop (1-4)

Systems engineering is an acquired behavior to be developed throughout the master's degree program. Students and faculty advisers will engage in creative workshop activities integrating technical specialty skills and project experience invoking systems engineering applications of communication, synthesis and creativity, team building, problem solving, management of time and resources, and system life-cycle thinking. A student portfolio will document the program plan and document that the desired behavioral change is taking place. Prerequisite: consent of instructor. Pass/No pass only.

SysE 591

Systems Engineering Approach (4)

Engineering of complex hardware, software systems encompasses quantitative methods to understand vague problem statements, determine what a proposed product/system must do (functionality), generate measurable requirements, decide how to select the most appropriate solution design, integrate the hardware and software subsystems, and test the finished product to verify it satisfies the documented requirements. Additional topics that span the entire product life cycle include interface management and control, risk management, tailoring of process to meet organizational and project environments, configuration management, test strategies, and trade-off studies. Prerequisite: consent of instructor.

SysE 595

Hardware-Software Integration (4)

Systems engineering is applied to the integration of hardware-software systems, focusing on embedded computer products development and information technology systems. Factors that affect the selection of hardware and software solutions in design will be examined, as well as the use of trade studies to optimize the efficiency of integration issues. Techniques for partitioning of system-level functions and requirements to hardware/software components will be provided, as will practical guidance, through case studies, process templates, and design checklists. Prerequisite: basic understanding of hardware and software development.

School of Fine and Performing Arts

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**B.A., B.S.—Architecture, Art, Music, and
Theater Arts**
B.A.—Art History
B.M.—Music
**Minor in Architecture, Art, Music, Jazz
Studies, Theater Arts, and Film Studies**
**Secondary Education Program in Art,
Music, and Theater Arts**
M.E.A.—Art
M.A.T., M.S.T.—Music
M.M.—Music
M.A., M.S.—Theater Arts

The mission of the School of Fine and Performing Arts is based upon the belief that students make the most creative progress when taught by professional working artists in a thriving urban environment. The school is committed to the study and practice of architecture, art, music, and theater arts within a nurturing

environment that encourages individual growth and imagination. Located in the heart of Portland's cultural district, the school resides within the Park Blocks of downtown, in which the major arts organizations are based, such as the Portland Art Museum and the Portland Center for the Performing Arts. We view this as our extended campus. Within blocks of the school reside theaters, galleries, professional studios, and design and architectural firms, which provide a stimulating environment in which our students develop through interactions and internships. The combination of a celebrated faculty and a professional arts environment creates exciting and challenging undergraduate and graduate programs with high professional standards.



Architecture

229 Shattuck Hall
503-725-8405
www.arch.pdx.edu/

B.A., B.S.—Architecture, Concentration in Architectural Project Management Minor—Architecture

Architecture at Portland State University is an aesthetically focused program within the context of cultural and political issues. The program provides a balanced undergraduate liberal arts education for the student planning to enter a graduate level professional degree program in architecture. Approximately 300 architecture majors explore architecture as a communicative, humanistic, and public art which emerges from a synthesis of design, fine arts, humanities, and technology. This broad exposure assures students of career flexibility within the full range of the environmental design fields. The architecture program is designed to develop the student's creative faculties and sense of critical judgment as well as fundamental skills and techniques. A major asset of the program is its location in Portland, one of the few centers of creative architectural and urban design practice in the western United States. Faculty are practicing professionals and artists, and since PSU uses the Portland region as a laboratory, there is extensive involvement by the region's architectural community as adjunct faculty, guest lecturers, critics, and mentors. PSU students not only observe, but participate in one of architecture's most dynamic environments.

Most states require that an individual intending to become an architect hold an accredited architectural degree. There are two types of degrees that are accredited by the National Architectural Accrediting Board: (1) the Bachelor of Architecture and (2) the Master of Architecture. A master's program will be shorter for students having a preprofessional bachelor's degree. This four-year, preprofessional degree, such as the one at PSU, is not accredited by NAAB. The preprofessional program is useful to those wishing a foundation in the field of architecture, as preparation for either continued education in a master of architecture first professional degree program or for employment options in fields related to architecture.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for major. The B.A./B.S. major in architecture requires the completion of a minimum of 98 credits in addition to the general University requirements for a degree found on page 12. The required courses are as follows:

	Credits
Arch 100 Introduction to Architecture.....	4
Arch 180, 181 Beginning Design Studio I, II	12
Portfolio Review/Selected Admissions	
Arch 230, 231, 232 Architecture and Cultural History I, II, III	12
Arch 280, 281, 282 Architectural Design Studio I, II, III	18
Arch 350, 351 Architectural Structures I, II	8
Arch 360, 361 Architectural Building Technology ..	8
Arch 380, 381, 382 Architectural Design Studio IV, V, VI.....	18
Adviser-approved upper-division credits in Architecture.....	18
Total	98

Admission to the Beginning Design Studio sequence (180, 181) is competitive and determined by an application process involving faculty review of each student's academic record and a statement of intent.

Admission to the sophomore level Architecture Design Studios (280, 281, 282) is based on a competitive review of a student's academic record, a statement of intent, and a portfolio of creative work.

All students must obtain an adviser for academic planning of their program. Apply through the department office.

Architecture courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling department major requirements. All courses used to satisfy the departmental major requirements, whether taken in the department or elsewhere, must be graded C- or better.

Requirements for major with concentration in architectural project management. *This program is currently under revision; contact the department for details.* In addition to the general University requirements for a degree found on page 12, the student who specializes in architectural project management is expected to meet the following departmental requirements:

	Credits
BA 101 Introduction to Business.....	4
BA 205 Business Communications	4
BA 211 Fundamentals of Financial Accounting.....	4
Stat 243 Introduction to Statistics	4
Arch 100 Introduction to Architecture.....	4
Arch 201, 202, 343 Construction Project Management I, II, III	18
Arch 344 Construction Codes and Compliance.....	4
Arch 345 Advanced Construction Projects	4
Arch 180, 181 Beginning Design Studio I, II	12
Arch 340 The Profession of Architecture	4
Arch 341 Developing as a Professional.....	4
Arch 360, 361 Architectural Building Technology I, II.....	8
Arch 425, 426 Architectural Computer Graphics I, II.....	8
Arch 466 Specifications Interpretation.....	4
Total	88

Requirements for minor. To earn a minor in architecture a student must complete 44 credits including the following:

	Credits
Arch 100 Introduction to Architecture.....	4
Arch 180, 181 Beginning Design Studio I, II	12
Arch 230, 231, 232 Architecture and Cultural History I, II, III	12
Architecture or art studio electives	8
Adviser-approved upper-division credits in architecture	8
Total	44

Architecture courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling department minor requirements.

Eighteen of the final 24 credits must be taken in residence at PSU.

The Department of Architecture reserves the right to retain for archival or exhibition purposes any student work executed as part of a Department of Architecture instructional program. In addition, the department reserves the right to document, reproduce, and publish images of any such student work in PSU publications, printed or electronic, for the purposes of research, publicity, and outreach, giving publication credit to the student.

Courses

Courses with an asterisk () are not offered every year.*

Arch 100 Introduction to Architecture (4)

Introductory course designed to introduce concepts, theories, and practices of the discipline of architecture. Includes a study of perceptual, environmental, technical, and organizational concepts through lectures and individual projects in observing architectural spaces and forms. Open to non-majors.

Arch 120 Basic Drawing (4)

An introduction to freehand drawing focused on the delineation of both interior and exterior

space, starting with direct observation through to conceptual drawings of imagination. Use of different media and color including the study of light and light qualities. Open to non-majors.

Arch 180, 181
Beginning Design Studio I, II (6, 6)

Foundational design studio sequence initiating awareness of the creative language of architecture through practical assignments in drawing, modeling, and artful making. The communication of perceptions and imaginative propositions through the use of diverse media is encouraged. Includes individual criticism, lectures, and seminar discussions. Must be taken in sequence. Prerequisite: Arch 100.

Arch 199
Special Studies (Credit to be arranged.)

***Arch 201, 202**

Project Management I, II (6, 6)

Series of courses designed to develop in students construction project management techniques for profitable construction administration. Students will demonstrate knowledge of course material by completing projects in light construction administration. Coursework includes utilization of estimating, critical path, and presentation computer software relevant to current practices.

Arch 201: emphasis on estimating, construction sequence scheduling, critical path, specification interpretation and design standards necessary for successful administration of construction projects.

Arch 202: developing standards of performance, bidding, contracts and liability, production scheduling, and techniques for controlling a profitable construction project.

Prerequisite: Building construction certificate program, instructor's consent, or equivalent. Courses must be taken in sequence.

Arch 225
Digital Graphics (4)

A beginning computer graphics course that has at its core the idea to probe, to experiment, and to investigate the computer's 3D modeling capability as a tool for rigorous design investigations. Prerequisite: Arch 180.

Arch 230, 231, 232
Architecture and Cultural History I, II, III (4, 4, 4)

A series of courses tracing the history of Western culture through its architecture from the early Paleolithic Age up to the 20th century. The first course examines the early Stone Age through to the Renaissance, the second course examines the late Renaissance through to the 19th century, and the third course addresses the 20th century. The courses will focus on a select number of architectural works that are representative of specific cultural beliefs, values, and ideologies as embodied in architectonic forms and experiences. Must be taken in sequence.

Arch 280, 281, 282
Architectural Design Studio I, II, III (6, 6, 6)

Studio investigations of fundamental design concepts, issues, and process. Projects and exercises focusing on the concepts of making three-dimensional forms—organization, proportion, scale, human activities, and introductory site and

building design relationships. The release of the student's potential creative capabilities is a primary concern for the course. Includes individual criticism, lectures, and seminars. Courses must be taken in sequence. Prerequisites: Arch 100, 181.

***Arch 330, 331**
Twentieth Century Architectural History and Theory (4, 4)

Introduction to the history and theories of Modernism from the late 19th century to present day. Explores diverse, contemporary issues with a focus on the relationship between theory and the art and craft of building. Selected topics will emphasize the probing of philosophical and ideological aspects of current practice.

Prerequisite: 6 credits lower-division art history.

***Arch 340**
The Profession of Architecture (4)

Introduction to the profession and practice of architecture. Topics include education, licensure, specialized body of knowledge, ethics, and the range of issues that have an impact on the design of the built environment.

***Arch 341**
Developing as a Professional (4)

An interdisciplinary course designed for students to gain an understanding of professional development as a sequence of processes. Students will gain an understanding of different problem-solving processes; the importance of communication inside and outside the organization; the role of assessment in terms of self, organization, and client; and gain an understanding of the impact of professional ethics and social responsibilities.

***Arch 343**
Project Management III (6)

Third in a series of courses designed to develop in students advanced construction management techniques. Emphasis on developing customer service plans, customer relations, quality control, project evaluation, and planning for future opportunities. Prerequisite: Arch 202.

***Arch 344**
Construction Codes and Compliance (4)

Application of Oregon codes and regulations that govern the commercial and industrial construction industry. Students complete assignments and quizzes in the utilization and interpretation of uniform standards defined by predominant industry standards. Upon completion of the coursework, students will be able to interpret applicable jurisdictional codes.

***Arch 345**
Advanced Construction Projects (4)

Course gives students an opportunity to apply project management skills to a construction process. Provides verification of previous project management course content through implementing and evaluating its effectiveness in relation to a direct field application. Prerequisite: Arch 343.

Arch 350, 351
Architectural Structures I, II (4, 4)

Arch 350 will cover principles and applications of static equilibrium to structures with emphasis on building structures. Includes stress analysis for axial force, flexure, and shear and studies in combined stress and column stability. Arch 351 will cover lateral force analysis; structural design of solid and glue-laminated wood members and trusses; design of steel and reinforced concrete members. Must be taken in sequence. Prerequisite: Mth 111, 112.

Arch 360, 361
Architectural Building Technology I, II (4, 4)

A two-quarter sequence introducing technologies involved in the design and construction of buildings. Topics include construction materials and methods, envelope design, mechanical systems, thermal, and other environmental building systems. Prerequisites: Arch 100, 180, 181.

Arch 367
Fundamentals of Environmental Design (4)

Basic concepts of climate and impacts on personal comfort. Thermal, lighting, and acoustical topics covered. Design approaches and concepts discussed from large urban siting projects to individual buildings in order to minimize mechanical systems and reduce energy use. Alternative energy sources and building materials introduced. Prerequisite: junior year standing.

Arch 380, 381, 382
Architectural Design Studio IV, V, VI (6, 6, 6)

Studio investigations of architectural designs based on supporting human activities, structure, and theory. Continued study of design process and methods encompassing concepts of architecture, landscape architecture, and interior design. Includes individual criticism, lectures, and seminars. Courses must be taken in sequence. Prerequisites: Arch 282.

Arch 399
Special Studies (Credit to be arranged.)

Arch 401/501
Research (Credit to be arranged.)

Arch 404/504
Cooperative Education/Internship (Credit to be arranged.)

Arch 405/505
Reading or Studio and Conference (Credit to be arranged.)

Arch 407/507
Seminar (Credit to be arranged.)

Arch 408/508
Workshop (Credit to be arranged.)

Arch 410/510
Selected Topics (Credit to be arranged.)

Arch 420/520
Advanced Architectural Graphics and Media (4)

Studio assignments exploring a full range of graphic representational techniques and media. Exploratory drawing and modeling work addressing the visualization of ideas in architecture, including: speculative thought and concept formation; studies of light and shadow; exploration of color and texture of materials; and the composition of appropriate and coherent forms of visual presentation.

Arch 425/525, 426/526
Architectural Computer Graphics I, II (4, 4)

Focuses on computer-aided design software as used in the architecture field (e.g., AutoCad). Arch 425 explores various methods for constructing, editing, and displaying two-dimensional architectural drawings. Arch 426 explores methods for creating, modifying, and visualizing three-dimensional architectural forms. Must be taken in sequence. Prerequisite: Arch 282.

Arch 430/530
Contemporary Architectural Theory (4)
Seminar course investigating architectural theory and critical thought by examination of key texts and contemporary architectural works.

**Arch 431/531
Studies in Contemporary Urban Design (4)**

Seminar course examining the contemporary relationships between the making of architecture and the making of cities. The course critically explores emerging urban characteristics, comparative design strategies, and the integration of design approaches with the processes of economic and social change. Prerequisite: upper-division standing.

***Arch 440/540
Professional Practice (4)**

Focuses on the context, responsibilities, licensure, principles, and processes of the practice of architecture, including project and client acquisition, risk analysis, project and practice management, project delivery methods, services and scope definition, roles and responsibilities of all parties, contract forms, general conditions of the contract, compensation methods, fee budget management, contract administration, and standard of care. Prerequisite: upper-division standing.

**Arch 441/541
Practicum and Internship (4)**

Offers students an opportunity to gain industry experience and to integrate the skills and concepts learned in the academic curriculum. Weekly seminars review and establish internship objectives, which closely parallel the architectural internship development program required for licensure. Students are expected to secure employment or positions that meet the objectives of the course. Prerequisite: Arch 440/540.

***Arch 442/542
Building Economics (4)**

Focuses on the economic and life cycle context of building design and management decisions. Topics include project life cycle, decision milestones, value analysis of design and project proforma, discounted cash flow and equivalency calculation methods, and conceptual estimating techniques for building projects. Strategic leveraging of project value is emphasized, and sustainability objectives are examined. Prerequisite: Arch 440/540.

**Arch 450/550
Advanced Architectural Structures (4)**

A workshop and seminar based course addressing the design and construction of large-scale structural systems. Investigates the innovative use of traditional and non-traditional building materials and structural detailing, exploring the potential of visually expressive structural systems through a series of working models. Architectural precedent and nature's engineering will be studied to gain insight into the correlation of form and structure. Prerequisites: Arch 350, 351.

**Arch 460/560
Advanced Architectural Technology (4)**

A lecture and seminar course providing exploration of current advanced building technology and form generative responses to current sustainability issues. Includes extensive investigation of current technologies for envelope, mechanical, and thermal comfort systems, and lighting and day-lighting strategies. Strategies for formal integration with architectural design are emphasized. Prerequisites: Arch 360, 361.

**Arch 466
Specifications Interpretation (4)**

Extensive use of specifications and interpreting plans organized around the Construction Specifications Institute (CSI) format for construction documents. Focus on interpretation and evaluation of stock specifications, plans, and standards of performance. Prerequisites: Arch 360, 361.

**Arch 480/580, 481/581, 482/582
Architectural Design
Studio VII, VIII, IX (6, 6, 6)**

Advanced investigations of architectural and urban design issues in concluding series of studios. Projects include the design of private and public buildings which require comprehensive, integrative design development. Includes individual criticism, lectures, and seminars. Courses must be taken in sequence. Prerequisites: Arch 380, 381, 382.

**Arch 511
Pro-thesis Seminar (4)**

A research and discussion based course to identify, define and articulate specific cultural issues and concerns that will become the inspiration for individual design thesis proposals. Students will generate the conceptual parameters and theoretical agenda of their proposed thesis, explore precedents and develop the program for a significant urban intervention.

**Arch 561
Detail Design (4)**

A companion course to the Design Thesis, developing the technological implications of the thesis proposition. Addresses the detailed application of technological know-how in terms of materials, envelope, environmental control, tectonics and structural logic, with respect to a predetermined portion of the architectural project.

**Arch 583
Architectural Design Studio X (6)**

Studio projects and critical discussions addressing themes and issues pertinent to the imaginative design of architectural intervention in urban environments. Encouraging experimental engagement with relations of material, form, human habitation, and cultural meaning.

**Arch 584
Design Development Studio (6)**

A studio course offering intensive creative study in laying the foundation for, and developing, an architectural design strategy and approach in preparation for the student generated thesis proposition (Arch 585). The class incorporates research, preliminary graphic and modeling work in idea generation, and critique. Prerequisite: Arch 511.

**Arch 585
Design Thesis (6)**

A studio course offering a focused culmination of architectural design studies by means of a student generated thesis proposition incorporating research, development, and creative transformation of a specific urban situation. Prerequisites: Arch 511, 584.

Art

310 Art Building
503-725-3515
www.art.pdx.edu

**B.A., B.S.—Concentration in Drawing/
Painting/Printmaking, Graphic Design,
Sculpture**

**B.A. only—Art History, Concentration in
Art History
Minor in above concentrations and in Time
Arts and Design Management
Secondary Education Program
M.F.A.**

Undergraduate programs

Many prominent Northwest artists, designers, and art historians began their professional careers by studying art at Portland State University. An even greater number of successful and productive people have used their training in the Department of Art as the basis for careers in commerce, industry, education, and a variety of fields limited only by imagination. Art, which requires personal initiative and imagination and develops skills in mental and manual dexterity, can provide the student with a back-

ground well suited for applications that are wide reaching and greatly rewarding.

The Department of Art at Portland State University consists of artists and designers, educators, and art historians actively engaged in their respective fields and with the extended community. As part of an urban university, the mission of the Department of Art is dedicated to helping students understand and experience ways that artists and their works are involved in a larger social context, both in the contemporary world and in the course of world history.

The foundation of the Department of Art is the development of a visual, verbal, and

critical language of the arts for future artists and scholars, as well as for members of the community. Since visual arts are a form of communication related to all other forms, understanding the theoretical bases and critical interpretations of this communication is a crucial component of our curriculum. At the same time, because the visual arts are a unique form of communication, students are trained in the necessary technical skills, the terminology and processes specific to the production of the visual arts.

Because learning “to see” is the most crucial component of any art program, the department requires all students to study both the history of art and to have studio experience. The Department of Art supports the full integration of art/design studio practice with art history and theory. Whether in the studio, computer lab, lecture hall, or seminar room, students have the opportunity to forge connections between traditions of visual art and their own developing imagination and expression.

Art programs are designed to develop the student’s creative faculties, a sense of critical judgment, and fundamental skills and techniques. In each of the concentrations within the art major, the principal and supporting courses have one general purpose: to instill a mature, professional attitude toward the process of artistic creation and expression.

Students enrolled in the Department of Art at PSU will acquire:

- Knowledge and experience of the creative problem solving processes.
- Knowledge of discipline-specific skills and vocabulary.
- Knowledge of art history and design.
- Knowledge of critical theories in art.
- Knowledge and experience to formulate a cumulative body of work in their discipline.

At the same time, the programs seek to permit the student a choice upon graduation. The alternatives are: (1) to undertake formal graduate study; (2) to begin a professional career in the fine or applied arts; or (3) to combine the student’s degree program with the basic teaching norm in order to qualify to teach in Oregon public schools.

As a general rule, the major in art requires a minimum of 90 credits in art courses. Included are extensive experiences in studio work and a comprehensive study of the history of art.

Programs in the Department of Art are accredited by the National Association of Schools of Art and Design.

Art history—B.A. degree only. The study of the history of art is intended to enable the student to analyze diverse works of painting, sculpture, architecture,

and other art forms and to relate artistic expression to historical, cultural, and philosophical factors. We offer two distinct tracks for the art history B.A. The first degree is a major in art with a concentration in art history, which provides a minor focus on studio arts. This major is intended for students entering professions that work directly with artwork, such as in art galleries or conservation. The second is a major in art history with a liberal arts focus and is intended for those students planning graduate study or other work requiring more advanced writing and analytical skills. Either focus within art history begins with the History of Western Art sequence and at least two studio courses, then advances to upper-division art history courses, comprising both Western and non-Western traditions.

Drawing/painting/printmaking—B.A., B.S. degree. The drawing/painting/printmaking program provides a comprehensive view of studio art practices, applications, theories, and history, with an emphasis on trends in contemporary art. The first year focuses on the foundations of art in design, drawing and art theory. In the second year students must select an emphasis, in either painting or printmaking, comprised of a comprehensive studio experience focusing on the basic skills and language required to further develop conceptual and expressive aspects of their work. In the third and fourth years, students continue to develop skills in material selection, technique, and application, but are also expected to develop their own voice and dynamic approach to their work. In addition, critical theories and professional practices in art are investigated to help students develop a sense of placement within the artist community.

Graphic design—BA, BS degree. The graphic design program provides a comprehensive education in design principles, applications, theories, history, and practice. Students work with faculty primarily through studio courses that introduce an increasing complexity of design problems combined with opportunities for independent development and interaction with the professional community. The first year of the concentration introduces principles of basic design and art and their specific applications in graphic design. The second year provides a comprehensive studio experience in graphic design and computer graphics. These first two years of study culminate with a required sophomore review.

All design students (including students transferring in with lower- or upper-division credits) must pass this review to enroll in 300-level graphic design and computer graphics courses (Contact the department

office or Web site for details, www.art.pdx.edu). In the third and fourth years, students choose courses in areas of increasing specialization, engage in professional internships, and develop a professional portfolio as the culmination of their studies.

Sculpture—B.A., B.S. degree. The sculpture program provides a comprehensive view of sculptural practices, applications, theories, and history, with an emphasis on trends in contemporary art. The first year focuses on the foundations of art in design, drawing, and art theory. In the second year students who select a concentration in sculpture are provided with a comprehensive studio experience focusing on practical skills and language required to further develop sculptural concepts. In the third and fourth years, students continue to develop skills in material selection, technique, and application, but are also expected to develop their own voice and dynamic approach to their work. In the final year, contemporary sculptural topics are explored along with critical theory and professional practices.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Requirements for Art majors and minors. In addition to general University requirements for a degree, majors and minors in art must meet departmental requirements that differ for each concentration of study described above. For the specific requirements of each concentration, please visit the department Web site, www.art.pdx.edu or office to obtain a “Concentration Sheet” that describes the program in detail. All students must obtain an adviser for academic planning of their program by the second year.

All art and art history courses used to satisfy departmental major or minor requirements, whether taken in the department or elsewhere, must be assigned a grade of C- or better.

For students transferring from other colleges and universities, a maximum of 12 credits may be graded P (pass) and may be accepted in fulfilling art department requirements with approval from an art adviser. In addition, any upper-division transfer credits being applied to major requirements must meet departmental standards. In these cases, a portfolio of work is required and the work contained in it must be approved by the concentration’s coordinator to receive transfer credit.

To satisfy departmental major requirements students must complete at least 24 credits of their upper-division (300/400) art/art history courses in residency at PSU. These 24 credits must be primarily within the student's concentration of study in art.

To satisfy departmental minor requirements students must complete at least 24 credits of their work within the subject area in residency at PSU. These 24 credits must primarily be in 200/300 level courses within the student concentration area.

The Department of Art reserves the right to cancel any course that does not have sufficient enrollments, in accordance with University policy.

ART EDUCATION: SECONDARY EDUCATION PROGRAM

Grades K through 12. Students who wish to teach art in the public schools must first complete the art major before applying to the School of Education for teacher training in the graduate program.

Prospective teachers should contact the art education adviser in the Department of Art before beginning the program.

Each student's program is tailored to meet the needs of the individual and the requirements of the continuing endorsement license.

Although licensure requirements are incorporated into degree programs, changes by the Oregon Teacher Standards and Practices Commission during the life of this catalog may alter the requirements. It is imperative that the prospective teacher be in touch with the art education adviser from the beginning, as applicants for licensure must meet the commissions requirements in force at the time of the licensure application. Please refer to the Graduate School of Education requirements on page 225.

Graduate programs

The Department of Art offers a two-year study program leading to the Master of Fine Arts degree in studio arts (including painting, drawing, printmaking, sculpture, and mixed media). The MFA program is designed to prepare individuals for professional practices directed toward careers in the field of fine arts and higher education.

Admission requirements

Application for admission to the M.F.A. program must be made by March 1 prior to the fall term the student intends to begin work toward the degree. Accepted students are expected to be in full-time residence beginning fall term.

The Department of Art Graduate Admissions Committee bases its decisions on the applicant's undergraduate preparation in art, a letter of intent, three recommendation letters, and most importantly on the portfolio of current creative work.

Applicants must have a B.A., B.S., or B.F.A. degree with a concentration in any of the following studio arts: drawing, painting, printmaking, sculpture, installation, performance art, or related field.

Application is a dual process between the Department of Art and the Office of Admissions. Contact the department for complete application materials.

Degree requirements

The student will complete at least 90 credits which must be distributed as follows:

	Credits
Art History	12
Project exhibition/master's statement	12
Electives	8
Studio work in one area of concentration (painting, printmaking, sculpture, mixed media).....	46
Graduate seminar (1st year candidates).....	6
Graduate seminar (2nd year candidates).....	4
<small>(2nd year seminar is an art history research seminar)</small>	
Art 585 Professional Practices in Studio Art	2
Total	90

Each M.F.A. student is assigned and works with an adviser for the first year. Students begin their studio and coursework by taking several courses with different faculty. Students are expected to sign-up for individual critiques and discussion with studio faculty. In addition, at least once each term the M.F.A. committee conducts a formal review of each candidate's studio work.

During the spring term of the first year, the M.F.A. student develops a proposal for directing their creative activity toward the completion of an exhibition project. At the end of the first year the M.F.A. committee conducts a candidacy review of the student's growth and progress. At this review, the candidate presents studio work and their proposal for an exhibition project. If the studio work and proposal are judged adequate in exploration, quality, and direction, candidacy is approved and the student advances unconditionally into the second year of the program.

At the beginning of the second year, candidates are assigned an adviser based on the student's request, area of interest and direction, and faculty availability. In addition to individual critiques with studio faculty and reviews with the M.F.A. committee, the candidate works closely with their adviser to produce their exhibition project. This project culminates the student's studio investigations during their two years in the M.F.A. program and should consist of a

cohesive body of work accompanied by a master's statement. The exhibition project is presented in a public exhibition during the spring term of the second year.

A maximum of 15 graduate credits may be transferred into the program with adviser approval.

Students in the M.F.A. program are provided with studio space for a maximum period of two years.

Department Archival Policy

The Department of Art reserves the right to retain for archival or exhibition purposes any student work executed as part of a Department of Art instructional program. In addition, the department reserves the right to document, reproduce, and publish images and any other media containing such student work in PSU publications, printed or electronic, for the purposes of research, publicity, and outreach, giving publication credit to the student.

Courses

Courses with an asterisk () are not offered every year.*

Art History

ArH 199
Special Studies (Credit to be arranged.)

ArH 204, 205, 206
History of Western Art (4, 4, 4)

Survey of the visual arts from prehistoric art to the present. Selected works of painting, sculpture, architecture, and other arts are studied in relation to the cultures that produced them. ArH 204: Prehistoric through Early Medieval. ArH 205: Romanesque through Rococo. ArH 206: Enlightenment through Contemporary Art. Open to non-majors.

***ArH 208**
Introduction to Asian Art (4)

Historical survey of the visual arts in Asia from prehistory to 1900. Selected works of painting, sculpture, architecture, and ceramics from India, China, Japan, Korea, Southeast and Central Asia are studied in relation to the religions and cultures producing them. Open to non-majors.

ArH 290
History of Modern Design (4)

History of graphic design from c. 1800 to the present, focusing on the changes in style within the field, but also on the interconnection between design and other forms of expression. Open to non-majors.

***ArH 291**
History of Animation (4)

Exploration of the history of animation, its sources in drawing, painting, photography, film, video, and digital media, its various innovators, styles, and techniques, its relationship with cinema, and its reliance on the development of creative and presentation technologies.

Emphasis is placed on the theory and critical study of animation. Readings and discussion are combined with extensive screenings of animations and animated films, including the history of computer animation. Open to non-majors.

ArH 311, 312, 313

History of Asian Art (4, 4, 4)

A survey of art and architecture of Asia from prehistoric times to the 19th century. The art and architecture (including ceramics, sculpture, painting, textiles, and other utilitarian implements—e.g., ritual bronze vessels of China) of Asia will be presented in context of chronology, source (indigenous or foreign influence), site and in relation to the forces of each society's culture, religion, politics, geography, and history. Buddhism, Hinduism, Confucianism, Shintoism, Taoism, Shamanism, symbolism, and mythology are basic to the arts of Asia. ArH 311: South Asia (India) and Southeast Asia (Sri Lanka, Cambodia, Thailand, Burma, and Indonesia). ArH 312: China and Korea. ArH 313: Japan. Open to non-majors.

***ArH 321**

Survey of Korean Art (4)

A chronological survey of art and architecture of Korea, and its uniqueness, in the context of East Asian art history. Prehistoric arts, as well as tomb paintings, and artifacts recognizing Buddhism's effect on Korea's sculptural, painting, and architectural heritage. Also treats Confucianism shaping Korean ink painting, folk painting, and porcelains. Open to non-majors.

ArH 399

Special Studies (Credit to be arranged.)

ArH 401/501

Research (Credit to be arranged.)

Terms, section, instructor and hours to be arranged. Consent of instructor and chair of the Department of Art required.

ArH 404/504

Cooperative Education/Internship (Credit to be arranged.)

Terms, section, instructor and hours to be arranged. Consent of instructor and chair of the Department of Art required.

ArH 405/505

Reading and Conference (Credit to be arranged.)

Terms, section, instructor and hours to be arranged. Consent of instructor and chair of the Department of Art required.

ArH 407/507

Seminar (Credit to be arranged.)

ArH 410/510

Selected Topics (Credit to be arranged.)

***ArH 411/511**

Chinese Buddhist Art (4)

A concentrated study of the Buddhist art of China and Central Asia. Buddhist art of caves of the Six-dynasties period (220-589 C.E.) to the Tang period will be covered in-depth. Basic concepts of Buddhism, such as Hinayana, Mahayana, and Tantric Buddhism; arts related to specific sects; and the iconography and stylistic changes will be covered. Open to non-majors.

***ArH 412/512**

Japanese Buddhist Art (4)

A survey of the Japanese Buddhist art and architecture, including: sculpture, painting, Shingon Buddhist art, Zen garden and architec-

ture, and ink paintings through selected examples from the 6th century to the 18th century. Open to non-majors.

***ArH 415/515**

Issues in Asian Art (4)

Issues in Asian art may be keyed to museum exhibitions or deal with thematic topics or specific media. Examples include Buddhist or other religious art, tomb art, ceramics, special topics in Korean art, or the work of Asian-American artists. Open to non-majors.

***ArH 422/522**

Chinese Painting (4)

A concentrated study of the Chinese paintings from the 3rd century B.C.E. to the 18th century. Open to non-majors.

***ArH 423/523**

Japanese Painting (4)

A survey of Japanese painting from the 4th century to the 19th century. Buddhist paintings, ink paintings, and decorative paintings. Open to non-majors.

***ArH 425/525**

Modern Japanese Painting (4)

Recent scholarship in the history of modern Japanese paintings and prints, from the Meiji, Taisho, and Showa periods covers major themes of Japan's westernization in a new light. The issues revolve around westernization: conflict and nationalism. New art forms, the revival of traditional styles, reclining women's theme, and the gaze of subjects will be explored. Open to non-majors.

***ArH 426/526**

African Art (4)

Examination of selected African art forms, styles, and traditions. Emphasis on the context of the art and artist and their relationship to politics and society in African history. Open to non-majors. This course is the same as BSt 470/570; course may be taken only once for credit.

***ArH 429/529, 430/530, 431/531**

Women in the Visual Arts (4, 4, 4)

Studies both the representation of women and gender and the art and patronage by women in various media (painting, sculpture, architecture, printmaking, photography, textiles, illuminated manuscripts, and mixed media). A three-term class ArH 429/529: Antiquity and the Early Middle Ages; ArH 430/530: 11th century (medieval) in Europe through the 18th century; ArH 431/531: 19th century and 20th century America and Europe. Open to non-majors. Prerequisites ArH 429/529 (for art and art history majors only) ArH 204. Prerequisites ArH 430/530 (for art and art history majors only) ArH 205. Prerequisites ArH 431/531 (for art and art history majors only) ArH 206. This course is the same as WS 429, 430, 431; may only be taken once for credit.

***ArH 432/532**

Issues in Gender and Art (4)

Research, reading, and discussion on sexual subjectivity and the construction of gender in visual images and various cultural contexts. May be keyed to regional exhibitions, collections, or symposia. Topics include: masculinity in ancient Rome, pornography and representation, surrealism, and sexuality. Open to non-majors.

Prerequisites (for art and art history majors only) ArH 206 and either 204 or 205.

***ArH 437/537**

Nature Into Art (4)

Focuses on a specific theme concerning the relationship of the nature and the environment with the visual arts. Specific themes may include topics such as environmental art, landscape painting and/or photography, landscape architecture, cartography and art, and the representation of animals. Open to non-majors. Prerequisites (for art and art history majors only) ArH 206 and either ArH 204 or 205.

***ArH 439/539, 440/540**

History of Architecture (4, 4)

A history of architecture from Prehistory to Post-Modernism. Open to non-majors. Prerequisites ArH 439/539 (for art and art history majors only) ArH 204 or 205. Prerequisites ArH 440/540 (for art and art history majors only) ArH 206.

***ArH 449/549**

Methods in Art History (4)

Seminar for juniors and seniors; suggested for all art history majors. Explores major approaches to the study of art history through readings, discussion, and essays. Includes the development of art history as a field and common methodologies such as iconography, gender theory, social art history, and post-modernism and post-structuralism. Open to non-majors. Prerequisites (for art and art history majors only) 3 courses (12 credits) in upper-division art history.

***ArH 450/550**

Great Periods and Themes in Art and Architecture (4)

A concentrated study of the art and/or architecture of a major historical period, for example: Pre-Columbian art and architecture; Native American art of the Pacific Northwest; Islamic art and architecture; Symbolism; and others. Maximum: 8 credits. Open to non-majors. Prerequisites (for art and art history majors only) ArH 204, 205 or 206.

***ArH 451/551, 452/552, 453/553**

Ancient Art (4, 4, 4)

Art and architecture of the ancient world from Paleolithic through Roman times. ArH 451/551: Prehistoric, Egyptian, Mesopotamian. ArH 452/552: Aegean and Greek. ArH 453/553: Etruscan and Roman. Open to non-majors. Prerequisites (for art and art history majors only) ArH 204.

***ArH 456/556, 457/557, 458/558**

Medieval Art (4, 4, 4)

A three-term sequence covering the art and architecture of medieval Europe and the Mediterranean, approximately from the conversion of Constantine to the Black Death (c. 300-1350 A.D.). ArH 456/556: Early Christian, Celtic, Carolingian, and Ottonian Art. ArH 457/557: Byzantine Art. ArH 458/558: Romanesque and Gothic Art. Open to non-majors. Prerequisites ArH 456/556 and 457/557 (for art and art history majors only) ArH 204. Prerequisites ArH 458/558 and 447/557 (for art and art history majors only) ArH 205.

ArH 461/561*Northern Renaissance Art (4)**

Manuscript illumination, painting, and sculpture in the Netherlands, Germany, and France from the late 14th to the 16th century. Open to non-majors. Prerequisites (for art and art history majors only) ArH 205.

ArH 471/571, 472/572, 473/573*Italian Renaissance Art (4, 4, 4)**

Painting, sculpture, and architecture from the 13th to the 16th century in Italy. Open to non-majors. Prerequisites (for art and art history majors only) ArH 205. Prerequisites (for art and art history majors only) ArH 205.

ArH 476/576, 477/577, 478/578*Baroque Art (4, 4, 4)**

A study of European art and architecture from the late 16th to the late 18th century. 476/576: Italy and Flanders; 477/577: Holland, Germany, and England; 478/578: Spain and France. Open to non-majors. Prerequisites (for art and art history majors only) ArH 205.

ArH 481/581, 482/582*19th Century Art (4, 4)**

A survey of painting and sculpture in the 19th century. ArH 481/581: Neoclassicism, Romanticism, and Realism; ArH 482/582: Impressionism and Post-Impressionism. Open to non-majors. Prerequisites (for art and art history majors only) ArH 206.

ArH 486/586, 487/587*American Art and Architecture 17th through 19th Centuries (4, 4)**

ArH 486/586: Colonial through the Early Republic. ArH 487/587: Jacksonian to the 20th century. Open to non-majors. Prerequisites (for art and art history majors only) ArH 206.

ArH 491/591, 492/592, 493/593*Modern Art (4, 4, 4)**

A survey of the mainstream of modern art including cultural influences, trends in style and expression, and comparative relationships in the visual arts. From 19th century Romanticism, Realism, and Impressionism through the varied movements of the 20th century. Open to non-majors. Prerequisites (for art and art history majors only) ArH 206.

ArH 498/598, 499/599*Art Since WWII (4, 4)**

Introduction to early Modernist movements in Europe and America. ArH 498/598: painting, sculpture, and architecture to 1975. ArH 499/599: painting, sculpture, architecture and performance from 1975 to present. Open to non-majors. Prerequisites (for art and art history majors only) ArH 206.

ArH 500*Art History Methods and Practice Seminar (4)**

Introduces major methodological approaches of art history as well as research tools necessary for later work on the master's thesis. It is intended for new or recently entering graduate students in art history.

ArH 503*Thesis (Credit to be arranged)****Art**

Courses with an asterisk () are not offered every year.*

Art 100**Introduction to Communication Design for Non-Art Majors (4)**

Introduction for non-art majors to communication design principles and methods used in composition. Lectures, readings, and projects enable creative application of design principles, color theory, and typography. Projects address formal concerns of visual communication design, visual literacy, design nomenclature, and design process through methods and strategies for creative problem-solving. Students demonstrate verbal and visual application of a design and compositional vocabulary, an effective design process, and skillful use of materials and tools. Projects do not require computer experience.

Art 115**Two Dimensional Design (4)**

Studio course investigating the elements and principles of design and their application to a variety of visual design problems. Acquisition and application of design strategies drawn from both rational and non-rational modes for problem solving. Various approaches drawn from art history, aesthetics, and art criticism are considered for the purpose of critically evaluating art. Open to non-majors

Art 116**Color Theory (4)**

Studio course investigating principles and methods of application in color theory. Physical properties, psychological effects, and historical symbolism for color. Art history, aesthetics, and art criticism are examined relative to various color issues. More advanced methods of critically evaluating one's own work and that of others. Exploration of both wet and dry media. All studio projects culminate with a class critique. It is highly recommended that students take Art 115 prior to this course. Open to non-majors.

Art 118**Introduction to Communication Design (4)**

Applies the fundamental design principles covered in Art 115 and 116 to typography and the visual language of communication design. Methods, strategies, and processes for thinking creatively and solving communication design problems are investigated. Projects address the formal concerns of communication design with an emphasis placed on typography as medium. Skillful use of materials and tools used in communication design. Open to non-majors with instructor's consent. Prerequisites: Art 115 and 116.

Art 120**Computer Graphics for Art and Design (4)**

Introduction to computer graphics as a technical and creative medium for art and design. Introduces concepts of vector and raster graphics, including digital type, image and device resolution, electronic color theory, file formats, and digital print technologies. Teaches fluency in computer graphics programs and application of creative projects. Open to non-majors with instructor's consent. Prerequisites: Art 115 and 116, or Art 100 for non-majors.

Art 131, 132**Introduction to Drawing (4, 4)**

Introduction to observational, expressive, and formal modes of drawing. Critical approaches

drawn from art history, aesthetics, and art criticism are examined relative to these modes of drawing to establish methods of evaluating art and placing one's own work and that of others in a historical context. Open to non-majors. Art 131: drawing from observation, with an emphasis on strategies, methods, and techniques for translating three-dimensional form and space onto a two-dimensional surface using the language of line and value, and the illusion of depth and texture. Markmaking and its expressive and descriptive qualities is examined. Hand-eye coordination is stressed. Art 132: further study of observational drawing, with emphasis placed on strategies, methods, and techniques for expressive and formal modes of drawing, as well as an introduction to a wider range of media, including wet. More advanced methods of critically evaluating art are examined. Open to non-majors with instructor's consent or departmental approval. Prerequisite: Art 131.

Art 199**Special Studies (Credit to be arranged.)****Art 200****Digital Page Design I (4)**

Studio course introducing concepts, applications, and projects in page composition, document design, and color pre-press. Text processing, typesetting, image capture, color correction, page layout, and pagination. Emphasis is placed on workflow and project management for production of documents in print and electronic media. Open to non-majors with instructor's consent. Prerequisite: Art 120.

Art 210**Digital Imaging and Illustration I (4)**

Studio course in digital image creation with an emphasis on photo-illustration, vector illustration, and hybrid illustration techniques. Image capture, compositing, retouching, stylistic treatments, shading, typography, and simulated three-dimensional imagery. Workflow and production issues, including color pre-press and digital formats appropriate to multiple media. Open to non-majors with instructor's consent. Prerequisite: Art 120.

Art 218*Calligraphy (3)**

A studio course in calligraphic lettering with the broad-edged pen. Students will study the Roman alphabet in three forms: capitals, minuscules and cursives. Emphasis will be on learning correct weights, proportions, and forms of letters. Practical skills required to shape letters with the pen will be learned. Principles of good lettering, historical development of alphabets, materials and drawing tools, letter and word spacing, layout and composition, and presentation of artwork will be covered. Recommended prerequisites: Art 115 and 116. Course may be repeated to a maximum of 9 credits.

Art 224, 225**Communication Design Studio I, II (4, 4)**

A sequence that develops strong conceptual solutions and thoughtful communication while addressing formal design issues related to typography, composition, scale, and proportion. Theoretical approaches, critical readings, group and individual critiques, and written assignments support visual design exploration. Art 224: Development of problem solving and idea generation skills with an emphasis on the inte-

gration of process and execution. Projects explore visual languages and the visual essay. Open to non-majors who have prerequisites and consent of the instructor. Prerequisites: Art 115, 116, 118, and 120 for art majors, or Art 100 and 120 for non-majors. Art 225: Further development of working processes and idea generation. Projects explore a personal visual language through the expansion of a strong individual design process. Open to non-majors who have prerequisites and consent of the instructor. Prerequisite: Art 224.

Art 230 Alternative Drawing I (4)

First of a two-term sequence to be taken in the second and/or third years for students majoring in either painting or printmaking. Engages the theories and practices involved in the many processes, methods, and techniques of drawing. Analytical and critical thought will be addressed resulting in a final end of the term review. Emphasis will be placed on experimentation and exploration of the various mixed media tools and materials available in drawing. Simultaneously students will begin to explore the conceptual and theoretical thought process through readings on contemporary art. Open to non-majors with instructor's consent or departmental approval. Prerequisites (for art and art history majors only): Art 131 and 132.

Art 254 Typography I (4)

First course in a sequence on typography. Builds on the principles introduced in Art 118. Projects focus on typography as medium and message. Typographic history, including the history of letterforms and the construction and use of grids. Design projects range from purely textual to problems that require the successful integration of typography and image. Conceptual solutions are emphasized. Open to non-majors who have prerequisites and consent of the instructor. Prerequisites: Art 118 and 120.

Art 255 Two-dimensional Animation I (4)

Studio introduction to principles and processes of two-dimensional animation composed in digital form. Storytelling and animation skills are developed in projects that apply tools and techniques for writing, staging, movement, timing, key framing, editing, and the use of sound and music. The language and aesthetics of animation are investigated through the design and production of a two-dimensional animation. Focus may be placed on either pixel or vector graphics. Project planning and workflow are explored in response to technical requirements for presenting the work in multiple media delivery formats. Recommended prerequisites: Art 115, 116, and 120.

Art 256 Three-dimensional Animation I (4)

Studio introduction to principles and processes of three-dimensional modeling and animation composed in digital form. Projects apply tools and techniques for modeling, lighting, surface rendering, scene construction, animation sequencing, editing, and the integration of sound and music. The language and aesthetics of animation and cinematography are investigated through the design and production of a

three-dimensional animation. Project planning and workflow are explored in response to technical requirements for presenting the work in multiple media delivery formats. Recommended prerequisites: Art 115, 116, and 120.

Art 257 Video I (4)

Studio introduction to moviemaking with digital video technologies. The language and aesthetics of cinematography are explored through design and production of a digital video short. Pre-production practices include: conceptual, character, and narrative development, screenplay, scene and lighting design, and sound design, with an emphasis on storyboard visualization. Production practices include: camera operation, scene setup and lighting, direction, acting, shooting, audio recording, digital transfer, editing, and composition. Post-production practices include: titling, special effects, and output for tape, web, or disc formats. Recommended prerequisites: Art 115, 116, and 120 or instructor's consent.

Art 260 Photographic Seeing (4)

Introduction to aesthetics and visual literacy through photography. Learn photographic seeing and design principles while investigating surroundings with a camera. Issues of form, content, and technique are discussed while learning effective communication. A coherent visual essay exploring a particular subject with a written introduction will be the final project. No darkroom work. The medium is color slide processed commercially. Open to non-majors with instructor's consent or departmental approval. Maximum: 8 credits.

Art 261 Photography (4)

Introduction to the aesthetics and techniques of black and white photography. Includes experimentation and camera controls, light quality, film processing, enlarging, mounting, and finishing of prints. Slide lectures on the history and theory of photography concentrating on the interplay between form and content. Open to non-majors with instructor's consent or departmental approval. Maximum: 8 credits.

Art 262 Photoimaging I (4)

Studio course introducing concepts, techniques, practices, aesthetics, and ethics of photographic imaging and image-making with digital technology. Investigations in photographic media are enabled through modes of expression most easily accomplished in digital form. Methods include retouching, color correction, filtering, masking, layering, and compositing. Projects apply concepts of digital imaging, including image capture and resolution, color models, tonal relationships, presentation formats, and photographic printmaking. Prerequisite: Art 261 or Art 260. Open to non-majors with instructor consent or departmental approval. Maximum 4 credits.

Art 270, 271 Introduction to Printmaking (4, 4)

A laboratory course in print art taught in sequence which focuses on a specific technique each term. From a drawing-based foundation

the thought process involved in making prints is strongly explored, translating drawn images into a graphic language. Concepts and content are investigated appropriate to the technique taught. Individual and group discussions as well as portfolio reviews are an intricate part of the review process. Art 270 explores monotype or dry point. Art 271 explores etching or relief. Open to non-majors with instructor's consent or departmental approval. Prerequisites (for art and art history majors only): Art 131 and 132.

Art 281, 282 Introduction to Painting I, II (4, 4)

A two-term sequence course that introduces the principles and practice of painting. Art 281: explores basic theory and use of color and composition. Assignments involve both conceptual approaches and direct observation using still life, figures and landscape. Art 282: moves from the basic theory and use of color and composition to assignments involving both direct observation using still life, figures and landscape and a more conceptual approach. Further explores the various painting styles, techniques, and media used throughout the early 20th century. Courses must be taken in sequence. Open to non-majors with instructor's consent or departmental approval. Prerequisites (for art and art history majors only): Art 131, 132, and 116.

Art 291, 292, 293 Sculpture I, II, III (4, 4, 4)

Art 291-Mass: students will be introduced to working in three dimensions through observation and those materials that lend themselves to forms that produce actual mass and volume. Some work from a life model. Plaster mold-making will be included. Art 292-Plane: an approach to three dimensions that involves constructive techniques. Mass and volume will be achieved through planer construction. Art 293-Space: focus on how an object exists in space and how that space makes an object. Both planer and mass forms will be considered. Open to non-majors with instructor's consent. Open to non-majors with instructor's consent or departmental approval. Prerequisites (for art and art history majors only): 4 credits in sculpture.

***Art 294 Water Media (4)**

The techniques and uses of watercolor, gouache, and other water-based mediums with attention to unique characteristics as painting mediums. Collage and mixed media may be included with water-soluble pencils and crayons. Lectures on historic uses of these media and discussions of the aesthetic possibilities for layering and transparencies. Open to non-majors with instructor's consent or departmental approval. Prerequisites (for art and art history majors only): Art 131, 132, and Art 115, 116.

Art 296 Digital Drawing and Painting (4)

Studio course introducing concepts and processes in computer graphics through a set of defined problems examined through digital drawing and painting applications. Projects explore a range of tools and techniques used in the digital paint environment, including the acquisition of imagery. The unique features of

digital tools and techniques are investigated in terms of their relationships with traditional materials and processes. A critical and conceptual framework is developed for the many uses of these tools in a fine art context through an emphasis on using the computer as an artist's tool and the inclusion of digital art forms and processes into the mixed media studio. Open to non-majors with instructor's consent or departmental approval. Recommended prerequisites (for art and art history majors only): Art 115, 116, and 131. Studio artists will be given preference.

***Art 297**

Book Arts (4)

This mixed media class will explore the book as an art form. The relationship of images and/or words will be explored in relationship to narrative and sequential structures. Traditional and experimental methods of binding will be taught. Lectures on the history of the artist's book and issues in imagery and/or typography will be presented. Class emphasizes an experimental and conceptual approach that integrates content and form. Open to non-majors with instructor's consent or departmental approval. Prerequisites (for art and art history majors only): Art 131, 132, and Art 115, 116. Maximum: 8 credits.

Art 299

Special Studies (Credit to be arranged.)

Art 300

Digital Page Design II (4)

Studio course in print design with an emphasis on digital pre-press. Creative projects with an emphasis on typographic solutions are developed through all stages of design and production and completed in a press run. Industry standards for design and production practices are examined. Prerequisites: Art 200 and 210.

Art 310

Digital Imaging and Illustration II (4)

Studio course in advanced composition using photo-illustration, vector illustration, and hybrid illustration techniques. Emphasis is placed on a conceptual approach to composition and creative process exemplified in the content, style, and execution of illustration projects. Open to non-majors with instructor's consent. Prerequisite: Art 210.

Art 312

Art in the Elementary School (3)

Art studio: exercises, problems and projects using tools, media, materials and equipment applicable to elementary teaching levels. Development of attitudes toward art and understanding of child growth and development. Open to non-majors.

Art 320, 321

Communication Design Studio III, IV (4, 4)

A sequence focusing on concept development and solutions for communication design problems. History, theoretical approaches, critical readings, group and individual critiques, and written assignments support visual design exploration. Art 320: Focus is placed on narrative and information structures. Historical context and ethical design concerns are addressed. Open to non-majors who have prerequisites and consent of the instructor. Prerequisite: Art 225, Art 321: Complex problems focus on public

communication, branding, and information design. Design strategy, creative briefs, project management, and team skills are applied to the conceptual problem-solving process. Open to non-majors who have prerequisites and consent of the instructor. Prerequisite: Art 320.

Art 341, 342

Interactive Media I, II (4, 4)

A two-term studio sequence in design for interactive media. Art 341: Interactive design for the Web focusing on information architecture, navigation systems, and visual interface. HTML markup and the use of visual design tools. Creation and optimization of graphics in compressed formats. Experience with Web production workflow through development of site projects. Topics include usability and the aesthetics of web media. Open to non-majors with instructor's consent. Prerequisites: Art 120 and 210. Art 342: Interactive design enhanced through the integration of animation, video, sound, and other media. Critical analysis of work in the field establishes vocabulary and principles for effective design, usability, and interactivity. Animation developed in vector, bitmap, and video formats. Technical standards for delivery of audio, video, and animation. Open to non-majors with instructor's consent. Prerequisite: Art 341.

Art 350, 351, 352

Life Drawing (4, 4, 4)

A studio course that develops observational skills and the ability to visualize and draw the human figure. Later, analytic skills are combined with personal expression and invention. Wet and/or dry media will be used to explore the implications of line and the figure in compositional environments. The skeleton and muscles will be studied in relationship to the model's poses. Art 350: emphasis on the skeletal structure of the body. Art 351: emphasis on the muscular system and Art 352: emphasis on compositional and expressive means. Open to non-majors with instructor's consent. Prerequisites (for art and art history majors only): Art 131 and 132.

Art 354

Typography II (4)

The second course in a sequence on typography addressing more complex communication problems. An emphasis is placed on developing strong conceptual solutions and integrating text and image. Design, art, and literary theory is introduced and applied to the problem-solving process. Continued emphasis is placed on understanding design within a historical context. Projects to include large, multiple page formats, such as books, editorial design, and annual reports. Open to non-majors who have prerequisites and consent of the instructor. Prerequisites: Art 200 and 254.

***Art 360**

Intermediate Photography (4)

Study of photography as a visual language. Students work on extended assignments that explore technical, aesthetic, and ethical issues of photographic communication. Lectures on contemporary photography. Emphasis placed on the photographic series. Working in either a documentary or conceptual approach. Open to non-

majors with instructor's consent. Prerequisite: four credits in Art 261. Maximum: 8 credits.

***Art 361**

Photographic Lighting (4)

The study of natural and artificial lighting techniques with two principal concerns: how different kinds of light alter both the black and white photograph's aesthetic qualities and its clarity of visual communication. Includes working outdoors and indoors with variable natural light and learning to control artificial light in the studio. Working in low available light situations is also emphasized. The documentation of 2D and 3D artwork for personal portfolios or commercial purposes is demonstrated. Includes a final portfolio comprising two series: one using difficult natural light and one using artificial sources. Prerequisite: Art 261. Open to non-majors with instructor consent. Maximum 8 credits.

Art 367

Design Team Management I (4)

Introduction to multidisciplinary, team-based, problem-solving practices in communication design. Majors in art/graphic design and non-art majors enroll in this course to form interdisciplinary teams working on hypothetical projects or case studies in current business problems, issues, and trends. Emphasis is placed on strategic design and planning, creative process, project management, and studio management. Students demonstrate skills in research, conceptual development, persuasive writing and communication, negotiation, initiative, collaboration, and team dynamics. This course prepares students for participation in team-based community service projects developed in Art 468 Design Team Management II. Open to non-majors with instructor's consent. Prerequisites: for non-art majors, Art 100, 120, 200, 224, and 290. For art majors, Art 321, Art 354, and either Art 300 or Art 341.

Art 373

Creative Sculpture (4)

A creative study of all aspects of sculpture involving various media such as clay, plaster, wood, stone, and the metals, with emphasis, as necessary, on architectural sculpturing. Open to non-majors with instructor's consent. Recommended prerequisite: 8 credits in elementary sculpture. Maximum: 12 credits.

Art 391

Alternative Drawing II (4)

Second of a two-term sequence to be taken in the third year for students majoring in either painting or printmaking. Engages the theories and practices involved in the many processes, methods, and techniques of drawing. Analytical and critical thought is emphasized and part of the final end of the term review. Emphasis will be on postmodern concepts and theories as applied to studio practice in art since 1960. Readings, discussions, and research are expected to inform studio practice. Required for all transfer students in painting/drawing/printmaking. Open to non-majors with instructor's consent. Prerequisites (for art and art history majors only): Art 230. ArH 206 strongly recommended.

**Art 392, 393
Intermediate Painting I, II (4,4)**

Study of various concerns in the expansion of technical and conceptual approaches dealing with form and content in both historical and contemporary practices. Students investigate a variety of ways of seeing that expands their approach to the subject and prepares them to begin development of an independent body of work in advanced painting. Students work both individually and in a group setting. Art 392: emphasis is placed on surface, materials, and other technical concerns, although issues dealing with the relationships of form and content are also discussed. Art 393: utilizing traditional and non-traditional technical processes while dealing with specific themes, students develop a personal vocabulary within a contemporary discourse. Open to non-majors who have prerequisites and consent of the instructor. Prerequisites (for art and art history majors only): Art 230 and Art 281, 282.

**Art 399
Special Studies (Credit to be arranged.)**

**Art 401/501
Research (Credit to be arranged.)**
Terms, section, instructor and hours to be arranged. Consent of instructor and chair of the Department of Art required.

***Art 402/502
Art Studio for Elementary and Secondary Education (1-6)**

Designed for the education student who may elect regular studio instruction in sculpture, painting, drawing, ceramics, jewelry and metal-smithing, textiles, or graphic design as fits the need of the student's teaching concentration. Arrangements must be made for placement in specific studio classes. Enrollment restricted to elementary education M.A.T./ M.S.T. candidates and art students in a certification program only. Credit not transferable to any other graduate program. Maximum: 18 credits.

**Art 404/504
Cooperative Education/Internship (Credit to be arranged.)**

Terms, section, instructor and hours to be arranged. Consent of instructor and chair of the Department of Art required.

**Art 405/505
Reading or Studio and Conference (Credit to be arranged.)**

Terms, section, instructor and hours to be arranged. Consent of instructor and chair of the Department of Art required.

**Art 406/506
Projects (Credit to be arranged.)**

Terms, section, instructor and hours to be arranged. Consent of instructor and chair of the Department of Art required.

**Art 407/507
Seminar (Credit to be arranged.)**

Terms, section, instructor, and hours to be arranged. Consent of instructor and chair of Department of Art required.

**Art 408/508
Workshop (Credit to be Arranged.)**

Terms, section, instructor and hours to be arranged. Consent of instructor and chair of the Department of Art required.

**Art 410/510
Selected Topics (Credit to be arranged.)**

Maximum: 12 credits in one area. Prerequisite: consent of instructor and chair of Department of Art.

**†Art 436/536, 437/537
Painting Topical Issues (4, 4)**

Advanced painting problems based on various subjects. Work may include various media, such as oils, acrylics, and mixed media. May be offered with specific subtitles such as Figure Painting or Landscape Painting. Maximum: 8 credits. Open to non-majors with instructor's consent. Prerequisites (for art and art history majors only): Art 392 and Art 393.

***Art 440
Interactive Team (4)**

Interactive media design and development for internal and external community clients. Design solutions are presented, critiqued, and revised based on initial and ongoing client contact. Sites are developed, deployed, tested, and maintained on web servers. Team-based design and development process is coordinated through project management practices. Emphasis is placed on strategic and tactical design process, industry standards, usability studies, business proposals, design documents, and other professional practices. Open to non-majors who have prerequisites and consent of the instructor. Prerequisites: Art 341 and 342.

***Art 455
Time Arts Studio (4)**

Advanced practicum for students seeking a minor in time arts. Students propose projects that may encompass or combine work in 2D animation, 3D animation, and video. Emphasis is placed on the professional presentation and delivery of projects. Consent of instructor required. Prerequisites: Art 255, 256, 257, 296 and ArH 291.

***Art 460
Digital Media Practicum (4)**

Advanced topics in digital media are explored through individual research and design projects implemented through a teaching assistantship for digital media courses. Projects include, but are not limited to, the design and development of learning resources in a variety of digital and online formats. Topics include: graphic design as applied to the objectives of instructional design, information architecture and sequencing, and effective instructional formats, such as interactive media, animation, and streaming video. Prerequisite: senior standing, completion of at least one upper-division digital media elective, and permission of instructor.

***Art 461/561
Photographic Exploration (4)**

A directed project in photography from either a documentary or a conceptual approach, in the field or the studio. Encourages experimentation in seeing, design, technique, and presentation with a goal to make a coherent series of photographs that is both aesthetically compelling and meaningful. Each student examines a particular subject in depth from a unique point of view. Historic and contemporary photographers are studied as examples of the power of the photo-

graphic series. Students should come to the first class with at least three possible subjects to explore. Prerequisites: Art 261, 360, and 361. Open to non-majors with instructor consent. Maximum 8 credits.

***Art 467
Design Team Management II (4)**

This course applies skills and knowledge gained in Design Team Management I. Non-art majors enroll in this course that meets with a 300- or 400-level communication design course engaged in community service projects. Both groups of students work collaboratively in teams on contracted projects for community clients. Projects address a variety and combination of print, audio, video, or interactive media. Emphasis is placed on skills required to create media campaigns: marketing, branding, identity, and advertising. Teams develop solutions for client business problems through a design process not limited to the following: development of design strategy, analysis of audiences, conceptual development and formal solutions, research of textual and visual content, appropriate context, management of client communications and mediation, selection and coordination of media, and overall project management, including project timelines and budgets. Design history, current design trends, formal concerns, and typography are covered. Professional presentation and delivery of all projects is expected. Open to non-majors who have prerequisites and consent of the instructor. Prerequisites: Art 100, 120, 200, 367, and ArH 290.

**Art 469
Communication Design Internship (4)**

An advanced, elective course with a required 100-hour placement in a professional design setting. Students conceive design, and develop client-oriented projects to gain experience in professional design practices, including design strategy, cost estimation, preparation of the creative brief, effective written and verbal presentation, team dynamics, client meetings, and project management. In-class sessions focus on topics and concerns related to professional practice. Stress is placed on understanding both the client's and designer's point of view in the conceptual process. Portfolio and permission of the instructor required. Pre-registration in this class is possible. However, final approval and acceptance into this class is based on portfolio review and instructor approval. Prerequisites: senior status in the major and Art 321, 341, 354. Maximum: 8 credits.

**Art 470
Contemporary Design Projects (4)**

Required for all design majors in their senior year. Students pursue their own body of work with a focus on the development of independent mechanisms for generating design problems and solutions. Emphasis is placed on accessing independent modes of analysis. Students learn to clarify concepts and execution methods in a sustained and integrated body of work that demonstrates refinement of visual and verbal communication ideas. The role of theory and criticism is emphasized. Prerequisites: Art 321, 354.

† 500-level classes intended for M.F.A. students only.

Art 471**Communication Design Seminar (4)**

Concentrated visual exploration of current topics in contemporary design, such as cross-cultural communication or environmental graphic design. Topics are supported by investigation of theoretical and critical issues. Projects focus on demonstrating a nuanced and multi-faceted investigation of the topic. Open to non-majors with instructor's consent. Prerequisites: Art 321, 354. Maximum 8 credits.

Art 472**Communication Design Portfolio (4)**

Development of a design portfolio that depicts, in a consistent and professional manner, the creative, conceptual, strategic, and technical abilities of the designer. Independent exploration and refinement of projects is required. Communication of design strategy and accomplishment through effective written and verbal presentation. Emphasis is placed on business, project management, and professional skills required in the marketplace. Required course for all majors in design. Prerequisites: senior status in the major and Art 321, 341, 354, 470.

Art 479/579**Advanced Printmaking (4)**

Advanced laboratory course in print art in which students specialize in one or more (in combination) of the following techniques, i.e., lithography, etching, monotype, relief, collagraph. Required course for the print major with the intention that each student explore and experiment to arrive at a cohesive body of printed work that speaks to an individual vision which is finalized in portfolio form. Analytical and critical discussion are part of the group and individual review process. Open to non-majors who have prerequisites and consent of the instructor. Prerequisites (for art and art history majors only): Art 270, 271 and 230. Maximum 12 credits.

Art 485 Studio Art Seminar (2)

A required class for studio artists. This class will explore special topics in contemporary art and issues of further professional development in the visual arts. Various contemporary theoretical issues and art world practices will be investigated. Prerequisites: upper-division standing in art program. Intended for art majors only. Maximum 4 credits.

†Art 488/588**Advanced Sculpture Welding (4)**

Constructivist approaches to working with the focus on steel. Welded metal sculpture fabrication using gas, electric, and heliarc welding methods. Experimental materials, methods, and concepts optional, consistent with the facilities and circumstances. Maximum: 12 credits. Open to non-majors with instructor's consent. Prerequisite: 8 credits in elementary sculpture and Art 373.

†Art 489/589**Advanced Sculpture Casting (4)**

Bronze casting using the lost wax investment method. Experimental materials, methods, and concepts optional, consistent with the facilities and circumstances. Maximum: 12 credits. Open to non-majors with instructor's consent. Prerequisite: 8 credits in elementary sculpture and Art 373.

Art 490/590, 491/591**Advanced Painting (4,4)**

A two-term sequence offering a contemporary view of painting through the exploration of various media, subject matter, and conceptual approaches. Research, idea generation, and production will be emphasized. Art 490/590: Students begin to develop an independent body of work within a historical and theoretical context. This course concentrates on working methods of research and execution through closely guided assistance. Art 491/591: Building on the processes and research practiced in Art 490/590, students complete a focused and unified body of work sustained by specific critical analysis. Courses must be taken in sequence. Open to non-majors who have prerequisites and consent of the instructor. Prerequisites (for art and art history majors only): Art 392, 393 and Art 391, or instructor's consent.

Art 492/592**Contemporary Studio Practice (4)**

Open only to art majors in their senior year. This course allows students to pursue their own body of work as a thesis project. Providing the basis for continuity and sustained concentration within a long-term project, this course emphasizes laying a foundation for research and concentrates on developing a mechanism to design and access independent modes of analysis. Students learn to clarify ideas/images in a personal body of work. Role of theory and criticism is emphasized. Open to non-majors with instructor's consent. Prerequisites (for art and art history majors only): 8 credits in Art 479/579 Advanced Printmaking; Advanced Painting, Art 490/590, 491/591; a minimum of two of the Advanced Sculpture Topics courses: Art 494, 495, or Art 496; or a combination of Advanced Painting and Advanced Sculpture Topics courses. Enrollment is contingent on a juried selection process. Pre-registration in this class is possible. However, final approval and acceptance into this class is based on portfolio review and instructor approval. Contact the department office for information. Maximum: 8 credits.

Art 493/593**Advanced Drawing Mixed Media (4)**

This class represents the culminating experience in drawing and mixed media. Students are expected to develop a unified body of work that reflects and is informed by art history and contemporary theory. Open to non-majors who have prerequisites and consent of the instructor. Prerequisites (required for art and art history majors only): Art 391. Maximum 8 credits.

**†Art 494/594, 495/595, 496/596
Advanced Sculpture Topics (4, 4, 4)**

Art 494/594, 495/595: series of rotating topics that address current conceptual approaches and issues in the arts including: installation, site specific, space/body, language, and materials. Art 496/596 independent projects: acting as a capstone course within the concentration the student will be expected to develop their own criteria and issues that result in a body of work which exhibits a focused direction. Open to non-majors who have prerequisites and consent of the instructor. Prerequisite: upper-division standing; 8 credits in sculpture and Art 373. Maximum: 16 credits.

Art 503**Thesis (Credit to be arranged.)*****Art 513****Art in the Elementary School (2)**

Methods and field experience: a lecture seminar and studio participation course with assigned field experience. Students develop attitudes toward an understanding of children's creative development through course planning in arts and crafts. Prerequisites: Art 312 and admission to the teacher education program.

Art 514, 515, 516**Art in the Secondary School (3, 3, 3)**

Methods and materials for teaching and coordinating art programs in grades K-12, with emphasis on organizing demonstrations, lectures, and visual presentations. Observations at various school levels. Seminars and participation in intercultural, special, and individualized education applied to art. Research into the art community as a resource, art as a career, and art and technology. Developing courses of study that sequence a program balance with two- and three-dimensional studio experiences, art history, appreciation, and methods of criticism appropriate to student level. Art 514, art education methods of instruction, organization of art materials and tools. Art 515, technology (media-computer) application to art, research in field for art education, art history, multicultural art resources, world issues in art education. Art 516: philosophy of art education, problems in field of art education. Open to non-majors with instructor's consent. Prerequisite: Art Department portfolio review required and admission into the art education GTEP program.

**Art 585 Professional Practices
in Studio Art (2)**

A required seminar for graduate students enrolled in the MFA program. Explores a variety of topics in contemporary art, concentrating on specific issues of further professional development for the graduate students. Through lectures, research, reading, and writing, a variety of tools and strategies directly related to contemporary art world practices will be taught. The students will be required to apply these issues to their specific studio work. Prerequisite: second year standing in the Master of Fine Arts Program. Maximum: 2 credits.

† 500-level classes intended for M.F.A. students only.

Music

231 Lincoln Hall
503-725-3011
www.fpa.pdx.edu/music.html

B.A., B.S.—Music
Minor in Music; Minor in Jazz Studies
B.M.—Performance; Concentration in Jazz Studies

Music Education Certification Program (K-12)

M.A.T., M.S.T.—Music

M.M.—Performance; Conducting

Undergraduate programs

The Department of Music is located within the hub of musical activity in the Pacific Northwest, only three blocks from the Portland Center for the Performing Arts. It maintains close ties to the Oregon Symphony, Portland Opera, Portland Symphonic Choir, and Portland Youth Philharmonic, among other organizations. Faculty and students alike interact with these performing organizations in various ways. Both traditional and innovative musical opportunities through the study of classical performance, jazz, performance pedagogy, music history, ethnomusicology theory, conducting, composition and music education are available for PSU students who live in the community or in campus housing.

Faculty members in the Department of Music are internationally recognized performers, conductors, composers, and scholars. From the beginning of their studies, music majors and minors study with some of the finest faculty in the nation in the string, wind, percussion, piano, and vocal areas. Standards are high as students pursue the conservatory-like Bachelor of Music degree or the more general Bachelor of Arts or Science in Music. After graduation, students continue in our excellent graduate programs or enter other excellent graduate programs, often as teaching assistants, or pursue careers in studio or public school teaching. Our graduates have consistently demonstrated their excellence in the fields of performance, conducting, composition, and/or scholarship. Many are leaders in music around the Northwest and elsewhere.

Programs in the Department of Music are accredited by the National Association of Schools of Music. The department offers many courses for the non-major, includ-

ing: applied music, ensembles, Basic Materials, Music Theory I, Music in the Western World, History of Rock, Jazz History, Guitar History, World Music, and American Musical Traditions.

Admissions requirement

Admission to the department is based on general admission to the University. See "Admission requirements" on page 45 for more information.

Degree requirements

Requirements for Bachelor of Arts and Bachelor of Science. Students are required to take an audition before entering departmental programs as a music major.

Students seeking the B.A. or B.S. in music must complete the following courses:

	Credits
Mus 111, 112, 113 Music Theory I	9
† Mus 114, 115, 116 Sight-Singing/Ear Training	3
Mus 46 Piano Proficiency Exam	(no credit)
Mus 203 Music in the Western World	4
Mus 211, 212, 213 Music Theory II	9
Mus 214, 215, 216 Sight Singing/Ear Training and Keyboard Harmony	3
Mus 304, 305, 306 Music History	12
Four credits selected from the following:	4
Mus 355 Jazz History	
Mus 374, 375 World Music	
Mus 376 American Music Traditions	
‡ Mus 195, 395 Band; Mus 196, 396 Orchestra;	
Mus 197, 397 Chorus	12
‡ MuP 190, 290, 390, 490 Applied Music (minimum of 6 upper-division credits)	12
Mus 351 Accompanying (required of piano majors only in lieu of 2 credits of Mus 395, Mus 396, or Mus 397)	(2)
§ Mus 47 Final Project or	
Mus 48 Junior Recital	(no credit)
◇ Mus 188 Recital Attendance (required through MuP 390)	(no credit)
Music Electives	8
Total	76

The credits in applied music are divided 3 credits at each level. With departmental approval this distribution may be altered; however, a minimum of 6 of the 12 credits must be completed at the upper-division level. A minimum of 6 of the 12 credits of band, orchestra, or chorus must be completed at the upper-division level. A piano proficiency examination is also required of all music majors before entering Music Theory II (Mus 211).

Requirements for Bachelor of Music. In addition to meeting the general University degree requirements, music majors seeking the professional music degree (Bachelor of Music in performance) must complete the following courses:

	Credits
Mus 111, 112, 113 Music Theory I	9
Mus 114, 115, 116 Sight-Singing/Ear Training	3
Mus 46 Piano Proficiency Exam	(no credit)
Mus 203 Music in the Western World	4
Mus 191, 192, 193 Class Piano	6
Mus 211, 212, 213 Music Theory II	9
Mus 214, 215, 216 Sight Singing/Ear Training and Keyboard Harmony	3
Mus 304, 305, 306 Music History II	12
Four credits selected from the following:	4
Mus 355 Jazz History	
Mus 374, 375 World Music	
Mus 376 American Music Traditions	
Mus 311 Formal Analysis	3
Mus 312 Orchestration	3
Mus 313 Counterpoint	3
Mus 320 Fundamentals of Conducting	2
Mus 481 Pedagogy	3
Mus 194, 394 Chamber Music	6
Mus 195, 395 Band; Mus 196, 396 Orchestra;	
Mus 197, 397 Chorus	12
MuP 190, 290, 390, 490 Applied Music (minimum of 6 credits of 490)	24
Mus 188 Performance Attendance (through MuP 390)	(no credit)
Mus 48 Junior Recital (30 minutes minimum)	(no credit)
Mus 49 Senior Recital	(no credit)
Elective music courses to be taken from the following areas: Music History, Music Literature, Composition, Theory, World Music, Applied Music, Pedagogy, Practicum, Conducting, additional Ensemble Performance, Instrumental Techniques	17
Mus 351 Accompanying (required of piano majors only in lieu of 2 credits of Mus 395, Mus 396, or Mus 397)	2
Total	123

Requirements for Bachelor of Music in performance with composition emphasis. In addition to meeting the general University degree requirements, music majors seeking the professional music degree (Bachelor of Music in Composition) must complete the following courses:

	Credits
MUS 111, 112, 113 Music Theory I	9
MUS 114, 115, 116 Sight Singing/Ear Training	3
MUS 191, 192, 193 Class Piano	6
MUS 46 Piano Proficiency Exam	no credit
MUS 203 Music in the Western World	4
MUS 211, 212, 213 Music Theory II	9
MUS 214, 215, 216 Sight Singing/Ear Training and Keyboard Harmony	3
MUS 240, 241, 242 Music Composition I	6
MUS 304, 305, 306 Music History	12
MUS 311 Formal Analysis	3
MUS 312 Orchestration	3
MUS 313 Counterpoint	3
MUS 320 Fundamentals of Conducting	2
Four credits selected from the following:	4
Mus 355 Jazz History	
Mus 374, 375 World Music	
Mus 376 American Music Traditions	
MUS 420 Analytical Techniques	3
MUS 421 Analysis of Contemporary Music	3
MUP 190, 290 Applied Music (Instrumental or Vocal)	12
MUP 390, 490 Applied Music (Composition)	12

† Concurrent enrollment in Mus 111, 112, and 113 is required.

‡ Music majors and minors and jazz majors and minors must enroll in Applied Music and the related large ensemble (Mus 195/395, 196/396, 197/397, 198/398) each term.

§ All B.A./B.S. candidates must complete a final project consisting of one of the following: a half recital (Mus 48); a 20-minute performance; a performance project; or regular performance on area recitals.

◇ To be taken concurrently with Applied Music each term through completion of MuP 390. Student attends eight performances.

MUS 195, 196, 197, or 198: (Large Ensemble) Band, Orchestra, Choir, or Jazz Lab Band.....	6
MUS 395, 396, 397, or 398 (Large or Small Ensemble).....	3
MUS 474, 475 MIDI Applications.....	4
MUS 48 Junior Composition Recital.....	no credit
MUS 49 Senior Composition Recital.....	no credit
MUS 188 Performance Attendance.....	no credit
Elective music courses to be taken from the following areas: Music History, Music Literature, Music Technology, Music Theory, World Music, Applied Music, Pedagogy, Practicum, Conducting, Ensemble Performance, Instrumental Technique.....	13
Total	123

Requirements for Bachelor of Music in performance with jazz emphasis. In addition to meeting the general University degree requirements, music majors seeking the professional music degree (Bachelor of Music in performance with a jazz emphasis) must complete the following courses:

Credits	
Mus 111, 112, 113 Music Theory I.....	9
†Mus 114, 115, 116 Sight-Singing/Ear Training.....	3
Mus 191, 192, 193 Classical Piano.....	6
Mus 46 Piano Proficiency Exam.....(no credit)	
Mus 203 Music in the Western World.....	4
Mus 211, 212, 213 Music Theory II.....	9
Mus 320 Fundamentals of Conducting.....	2
Mus 214, 215, 216 Sight-Singing/Ear Training and Keyboard Harmony.....	3
Mus 304, 305, 306 Music History.....	12
Mus 271, 272, 273 Jazz Improvisation.....	6
Mus 471, 472, 473 Advanced Jazz Improvisation.....	6
Mus 355 Jazz History.....	4
‡MuP 190, 290, 390, 490 Applied Music (6 credits of 390 and 6 credits of 490).....	24
Mus 198 Jazz Lab Band.....	6
Mus 394 Chamber Music Jazz Combos.....	6
Mus 398 Jazz Lab Band.....	6
Mus 424, 425, 426 Instrumental Jazz Arranging.....	6
Mus 474, 475 MIDI Applications.....	4
◊Mus 188 Performance Attendance.....	no credit
Mus 48 Junior Recital.....	no credit
Mus 49 Senior Recital.....	no credit
Electives.....	7
Total	123

Requirements for minor. To earn a minor in music, a student must complete 35 adviser-approved credits (17 credits must be in residence at Portland State University), to include the following:

Credits	
Mus 111, 112, 113 Music Theory I.....	9
†Mus 114, 115, 116 Sight-Singing/Ear Training.....	3
Mus 203 Music in the Western World.....	4
‡MuP 190 Applied Music.....	3
†Mus 195 Band; Mus 196 Orchestra; Mus 197 Chorus.....	6
Upper-division Music History or World Music.....	4
‡MuP 290 Applied Music.....	3
Mus 188 Performance Attendance (6 terms).....(no credit)	
‡Mus 395 Band; Mus 396 Orchestra; Mus 397 Chorus.....	3
Total	35

Requirements for minor in jazz studies. To earn a minor in jazz studies, a student must complete 35 adviser-approved credits (17 credits must be in residence at Portland State University), to include the following:

Credits	
MuP 190 Applied Music.....	3
‡MuP 290 Applied Music.....	3
Mus 111, 112, 113 Music Theory I.....	9
†Mus 114, 115, 116 Sight-Singing/Ear Training.....	3
◊Mus 188 Performance Attendance (Six terms are required).....	0
Mus 198 Jazz Lab Band.....	6
Mus 203 Music in the Western World.....	4
Mus 355 Jazz History.....	4
‡Mus 398 Jazz Lab Band.....	3
Total	35

All courses used to satisfy the department major or minor requirements, whether taken in the department or elsewhere, must be graded C or above.

MUSIC EDUCATION: CERTIFICATION PROGRAM (K-12)

Adviser: **D. Glaze**

The music education program is a graduate curriculum designed to prepare students for licensure for teaching in the state of Oregon. The courses listed below are undergraduate courses designed to prepare the student for the graduate curriculum in music education. The student must complete a bachelor's degree.

Technical courses	Credits
Mus 235, 236, 237 Percussion, Wind, and Brass Methods.....	3
Mus 318 or 319 Instrumental or Choral Arranging.....	2
Mus 320 Fundamentals of Conducting.....	2
Mus 321 Instrumental Conducting.....	2
Mus 324 Choral Conducting.....	2
§Mus 328 Introduction to Musical Careers.....	2
Mus 332, 333, 334 String Instruments and Vocal/Guitar Techniques.....	3
§Mus 409 Practicum.....	2
Mus 474 MIDI Applications.....	2
§Mus 484 Music with Children.....	3
Total	23

Other music courses	Credits
Mus 111, 112, 113 Music Theory I.....	9
Mus 114, 115, 116 Sight-Singing/Ear Training.....	3
Mus 203 Music in the Western World.....	4
◊Mus 188 Performance Attendance (Nine terms).....	0
‡Mus 195, 196, 197 Band, Chorus, Orchestra, or Jazz Lab Band.....	6
Mus 211, 212, 213 Music Theory II.....	9
Mus 214, 215, 216 Sight-Singing/Ear Training and Keyboard Harmony.....	3
Mus 304, 305, 306 Music History.....	12
Mus 395, 396, 397, or 398 Band, Choir, Orchestra, or Jazz Lab Band.....	6
MuP 190, 290, 390 Applied Music (minimum of 6 credits of MuP 390 are required).....	12
Four credits selected from the following:.....	4
Mus 355 Jazz History	
Mus 374/375 World Music	
Mus 376 American Musical Traditions	
Music electives must be chosen by student in consultation with adviser.....	8
Total	76

Non-music courses	Credits
Psy 311 Human Development.....	4
Ed 420 Introduction to Education and Society.....	4
Total	8

Graduate programs

Advisers: **J. Bluestone** (Graduate Coordinator), **B. Browne, R. Dobson, H. Gray, S. Martin, T. Stanford**

The Department of Music offers graduate work in music leading to the degrees of Master of Music (M.M.) in performance and Master of Music in conducting, as well as a Master of Arts in Teaching (M.A.T.) and a Master of Science in Teaching (M.S.T.). The M.A.T./M.S.T. degrees are general master's degrees in music. Graduate students in music may also pursue recommendation for standard certification. This curriculum differentiates between specialists in vocal music and instrumental music, but candidates in both areas complete a core of required courses.

Admission requirements

For admission to graduate study the student must hold a bachelor's degree representing a course of study equivalent to that pursued by PSU undergraduates in music. In addition to meeting the general requirements for admission to graduate study in the University, each student must successfully take the music entrance examination prepared by and administered in the Department of Music.

M.A.T./M.S.T. Program

All courses used to satisfy graduate requirements, whether taken in the department or elsewhere, must be graded B or above.

Degree requirements

M.A.T./M.S.T. PROGRAM

Core curriculum	Credits
Two of the following:.....	4
Mus 560 Music History: Medieval Period	
Mus 561 Music History: Renaissance Period	
Mus 562 Music History: Baroque Period	
Mus 563 Music History: Classical Period	
Mus 564 Music History: Romantic Period	
Mus 565 Music History: Early 20th Century	
Mus 566 Music History: Music Since 1950	
One of the following:.....	3
Mus 532 Band Literature	
Mus 533 Orchestral Literature	
Mus 534 Choral Literature	
One of the following:.....	3
Mus 521 Band Arranging	
Mus 522 Orchestral Arranging	
Mus 523 Advanced Choral Arranging	
One of the following:.....	3
Mus 541 Advanced Conducting (Instrumental)	
Mus 542 Advanced Conducting (Choral)	
All of the following:.....	3
Mus 511 Research Methods (Music).....	3
Mus 520 Analytical Techniques.....	3

† Concurrent enrollment in Mus 111, 112, and 113 is required.

‡ Music majors and minors and jazz majors and minors must enroll in Applied Music and the related large ensemble (Mus 195/395, 196/396, 197/397, 198/398) each term.

§ All B.A./B.S. candidates must complete a final project consisting of one of the following: a half recital (Mus 48); a 20-minute performance; a performance project; or regular performance on area recitals.

◊ To be taken concurrently with Applied Music each term through completion of MuP 390. Student attends eight performances.

MuP 590 Applied Music	2
MuP 591 Applied Music-Secondary Instrument (may substitute MuP 590 credits with adviser approval)	2
Ensemble: Chosen with advice of graduate faculty	3
Education/Pedagogy (chosen with adviser's assistance)	9
Elective Studies	10
Music electives chosen from the following areas: applied music, theory, arranging, composition, music history, world music, music literature, pedagogy, education, conducting, or additional ensemble performance	
Total	45

M.M. PROGRAM

Master of Music in performance	Credits
† MuP 590 Applied Music	12
Mus 506 Project and Graduate Recital	2
Mus 594, 595, 596, 597, 598 Chamber Music and/or Ensemble	3
Mus 520 Analytical Techniques	3
Mus 560-566 Music History	4
Mus 530, 531, 533, 534, 536 Music Literature	6
Mus 581, 582, or 583 Pedagogy	3
Mus 511 Research Methods	3
Electives (Determined in conjunction with adviser)	9
Total	45

Master of Music in conducting	Credits
† MuS 541, 542, 543 Conducting	9
Mus 506 Conducting Project	3
Mus 520 Analytical Techniques	3
Mus 513 Score Reading	3
Mus 595, 596, 597 Ensemble	3
Mus 522 or 521 Orchestra or Band Arranging	3
Mus 523 Choral Arranging	3
Mus 560-566 Music History	4
Mus 530, 531, 532, 533, 534, 536 Music Literature	3
Mus 511 Research Methods	3
Electives (Determined in conjunction with adviser)	8
Total	45

All degree candidates must take a final written examination. A final oral examination also may be required. All graduate students must receive a grade of B or above in music courses.

CONTINUING TEACHING LICENSE

Students may elect a program leading to the completion of requirements for the continuing teaching license, but not the M.A.T. or M.S.T. degree. This nondegree, license program emphasizes flexibility of choice from among various upper-division and graduate music courses, while including the education components required for licensure recommendation as listed on page 225.

A program containing a minimum of 45 approved credits is outlined for each student with the assistance of the assigned adviser. Any deficiencies in the student's baccalaureate degree program or initial license program which may appear when compared to departmental and University requirements for the basic norm will also be added to the requirements when making up the planned continuing license program. There is no final examination required for this program.

Courses

Courses with an asterisk () are not offered every year.*

MuEd 228

Introduction to Music Education (2)

Overview of the music education profession, with emphasis on the various levels, genres, options, and requirements of the field. Concurrent enrollment in an appropriate practicum (Mus 409) required. Prerequisites: Mus 111, 112, 113.

MuEd 332

String Techniques (3)

Study of the stringed instrument family for students in the teacher education program. Special emphasis will be given to the teaching of these instruments to groups of young and/or inexperienced students.

MuEd 333

Guitar Techniques (3)

Study of the guitar and the methods and materials used to teach guitar to young and/or inexperienced students. Required for students in the Music Education Program.

MuEd 334

Vocal Techniques K-12 (1)

Study of vocal techniques for students in the teacher education program. Special emphasis will be given to teaching voice to groups of young and/or inexperienced students from childhood through high school.

MuEd 335

Percussion Techniques (3)

Study of the percussion instruments of orchestra and band for students in the teacher education program. Special emphasis will be given to the teaching of these instruments to groups of young and/or inexperienced students.

MuEd 336

Flute and Double Reeds (1)

Study of how to teach and play flute and double reeds (bassoon and oboe) for students enrolled in the teacher education program.

MuEd 337

Clarinet and Saxophone (1)

Study of how to teach and play clarinet and saxophone for students enrolled in the teacher education program.

MuEd 338

High Brass Techniques (1)

Study of how to teach and play trumpet and horn for students enrolled in the teacher education program.

MuEd 339

Low Brass Techniques (1)

Study of how to teach and play trombone, euphonium and tuba for students enrolled in the teacher education program.

MuEd 340

Wind Instrument Techniques (3)

For students in the Choral/General Music Education track. Techniques of brass and woodwind instruments for groups of young students with special emphasis on resources, beginning techniques, and appropriate literature.

MuEd 341

Jazz Techniques (1)

Study of techniques used in the teaching of middle and high school instrumental jazz music. Includes rehearsal techniques, basic arranging, swing concepts, rhythm section con-

cepts, and improvisation. Prerequisite: instructor approval.

MuEd 420/520, 421/521 Choral Literature and Rehearsal Techniques (3, 3)

Students will learn the essentials of rehearsing large choral groups from grades 6-12 and requisite materials and techniques for starting and building a choral program. Prerequisites: Mus 322, MuEd 328, 334.

MuEd 422/522, 423/523 Instrumental Literature and Rehearsal Techniques (3, 3)

Study of critical thinking about many aspects of music education and developing a repertoire of teaching techniques and leadership skills—for students enrolled in the teacher education program. Prerequisites: Mus 321, MuEd 328, 335.

Mus 101, 102, 103 Basic Materials of Music (4, 4, 4)

Basic course in the theory, structure, and literature of music, requiring no previous musical experience. Includes basic sight-singing, music reading, writing, score analysis and composition in a variety of musical styles. For non-majors and preparation for students for enrollment in Music Theory I.

Mus 111, 112, 113 Music Theory I (3, 3, 3)

Provides a thorough ground-work in the melodic, harmonic, and rhythmic elements of music with written exercises and analysis based on the styles of Bach, Haydn, Mozart, Beethoven, and other 17th and 18th century composers. Registration in the appropriate Sight-Singing/Ear Training course is required. An entrance placement examination will be given. Basic Keyboard Skills is recommended for music majors and minors.

Mus 114, 115, 116 Sight-Singing/Ear Training (1, 1, 1)

Studies to develop the ability to sing notation at sight and to recognize and notate aural patterns. Registration in the appropriate Music Theory I course is required.

Mus 125, 126, 127 Guitar Workshop (2,2,2)

A workshop for discussion and applications of guitar related topics. Topics to include technique, sight-reading, transcribing. Audition may be required.

Mus 185 Guitar Orchestra (1)

A large guitar ensemble. Audition may be required.

Mus 188 Performance Attendance (No credit)

The student is expected to attend a minimum of eight live performances approved by the Department of Music for each term registered. It is expected that students will register for Performance Attendance concurrently with registration for Applied Music until the requirement for Performance Attendance is completed.

Mus 189 Repertoire Study (1)

Study and performance of selected repertoire. Available only to students enrolled in large ensemble, chamber music or applied music. Prerequisite: consent of instructor.

MuP 190 Applied Music (1-4)

Freshman year. Individual instruction in organ, piano, harpsichord, voice, guitar, orchestral and band instruments. Maximum: 12 credits.

† Master of Music candidates must continue to register for applied music credits if a performance major, and conducting credits if a conducting major, until the completion of the Graduate Project or Recital, even if this exceeds the 12 credit minimum.

Prerequisite: approval of faculty applied music supervisor.

Mus 191, 192, 193
Class Instruction (2, 2, 2)

Class instruction in instruments or voice. Offerings include piano, guitar, and voice. Students in Mus 193 should be enrolled in Mus 46.

Mus 194
Chamber Music (1)

Instruction in the art of small ensemble performance; the established repertory of string, wind, keyboard, or vocal chamber music. Maximum: 6 credits. Audition may be requested. Prerequisite: consent of instructor.

Mus 195
Band (1)

Maximum: 6 credits. Audition may be requested.

Mus 196
Orchestra (1)

Maximum: 6 credits. Audition may be requested.

Mus 197
Chorus (1)

Maximum: 6 credits. Audition may be requested.

Mus 198
Jazz Lab Band (1)

Performance of jazz literature in a big band setting. Maximum: 6 credits. Audition may be requested.

Mus 199
Special Studies (Credit to be arranged.)

Mus 201, 202

Introduction to Music (4, 4)

Designed for non-majors. Course involves lectures, reading, and listening. Course may emphasize music of different world cultures. Successively the course deals with elements of music and small forms (201), and large forms of music and categories of musical literature (202).

Mus 203
Music in the Western World (4)

Designed for music majors and others with the ability to read music. Introduction to the great composers and their compositions within a historical framework.

Mus 211, 212, 213
Music Theory II (3, 3, 3)

Continuation of the study of harmony. Introduction to harmonic counterpoint. Composition in small forms in various 18th, 19th, and 20th century idioms. Registration in the appropriate Sight-Singing/Ear Training and Keyboard Harmony course is required. Prerequisites: Mus 46, 113, and 116.

Mus 214, 215, 216
Sight-Singing/Ear Training and Keyboard Harmony (1, 1, 1)

Application of theoretical principles to the keyboard; understanding more advanced theory through the keyboard. Elementary score reading, keyboard harmonization of folk tunes, advanced work in sight-singing and ear training. Registration in the appropriate Music Theory II course is required. Prerequisites: Mus 46, 113, and 116.

Mus 240, 241, 242
Composition I (2, 2, 2)

The course involves the study of 20th century composition techniques. Students will compose chamber works using techniques studied in the class. Prerequisites: Mus 113 and 116. Must be taken in sequence.

Mus 261, 262
History of Rock Music (4, 4)

Traces the history and development of a popular music style in the United States, Great Britain, and other parts of the world. Includes other types of popular music in the twentieth century.

Mus 271, 272, 273
Jazz Improvisation (2, 2, 2)

Introduces the fundamentals of jazz improvisation. Beginning jazz skills include scales, song forms, melodic patterns, and repertoire development. Instructor approval required.

MuP 290
Applied Music (1-4)

Sophomore year. Continuation of MuP 190. Maximum: 12 credits. Prerequisites: MuP 190 and audition.

Mus 301, 302
Survey of Music Literature (4, 4)

For non majors; study of the history of music through examination of the literature of particular periods as follows: Mus 301: Music from 1700 to 1875; Mus 302: Music from 1875 to present.

Mus 304, 305, 306
Music History (4, 4, 4)

Intensive analytical study of the history of music in the Medieval and Renaissance Periods (Mus 304), Baroque and Classical Periods (Mus 305) and Romantic and 20th century periods (Mus 306). Prerequisites: Mus 113, 203.

Mus 311
Formal Analysis (3)

Thorough study of formal analysis, including phrases and periods, variations, two- and three-part song forms, developed ternary forms, sonata, rondo, and the concerto. Prerequisites: Mus 211, 212, 213.

Mus 312
Orchestration (3)

Fundamentals of arranging music for instrumental ensembles. Emphasis on basic principles of orchestration and their practical applications. Prerequisite: Mus 213.

Mus 313
Counterpoint (3)

Intensive study of polyphonic music. Analysis and application in writing contrapuntal exercises using two, three, and four voices. Prerequisites: Mus 211, 212, 213.

Mus 311, 312, 313
Counterpoint (2, 2, 2)

Intensive study of music reflecting the polyphonic impulse; analysis and application to exercises in two-, three-, and four-voice counterpoint. Prerequisites: Mus 211, 212, 213.

Mus 319
Choral Arranging (2)

Fundamentals of arranging music for vocal ensembles. Emphasis on basic principles of SATB writing. Prerequisite: Mus 213.

Mus 320
Fundamentals of Conducting (2)

The basic principles of conducting as they apply to both instrumental and vocal ensembles. Basic baton technique and beat patterns. Development of an independent use of the hands. Fundamentals of score reading, both instrumental and vocal. Prerequisite: Mus 213.

Mus 321
Instrumental Conducting (2)

The principles of conducting and training instrumental organizations. Prerequisite: Mus 320.

Mus 322
Choral Conducting (2)

The principles of conducting and training choral organizations. Prerequisite: Mus 320.

Mus 325, 326, 327
Guitar Workshop (2, 2, 2)

A workshop for discussion and applications of guitar related topics. Topics to include technique, sight-reading, transcribing. Audition may be required.

Mus 351
Accompanying (2)

Theoretical and practical study of the art of accompanying vocal and instrumental solos and performing duo-sonatas.

Mus 355
Jazz History (4)

Examines the development of jazz from its African and European roots and its origins in New Orleans to its florescence in Chicago and New York. Covers period from about 1900 to 1960. Focuses on important musicians and major musical styles.

Mus 360
The Guitar: its History and Music (4)

This course is designed to explore the origins of the guitar by examining its history, repertoire and performers. The course will look at all aspects of the guitar's history from the related ancient Sumerian stringed instruments to the modern-day electric guitar.

Mus 361, 362
History of Rock Music (4, 4)

Traces the history and development of a popular music style in the United States, Great Britain, and other parts of the world. Includes other types of popular music in the twentieth century.

Mus 374, 375
World Music (4, 4)

Study of the major musical cultures of Asia, the Middle East, and sub-Saharan Africa. Explores social and cultural contexts, instrument types, and structural organization of the music. Emphasis on listening.

Mus 376
American Musical Traditions (4)

Examines the diversity of musical traditions found in American history and culture. Included are African American, Anglo-American, Hispanic, and Native-American musical cultures, in the areas of folk, popular, and classical music genres.

Mus 381
Music Fundamentals (4)

Basic musicianship for the elementary teacher.

Mus 385
Guitar Orchestra (1)

A large guitar ensemble. Audition may be required.

Mus 389
Repertoire Study (1)

Study and performance of selected repertoire. Available only to students enrolled in large ensemble, chamber music or applied music. Prerequisite: consent of instructor.

Mus 390
Applied Music (1-4)

Junior year. Continuation of MuP 290. Maximum: 12 credits. Prerequisites: MuP 290 and audition.

Mus 394**Chamber Music (1)**

Instruction in the art of small ensemble performance; the established repertoire of string, wind, keyboard, or vocal chamber music. Maximum: 6 credits. Prerequisite: consent of instructor.

Mus 395**Band (1)**

Maximum: 6 credits. Audition may be requested.

Mus 396**Orchestra (1)**

Maximum: 6 credits. Audition may be requested.

Mus 397**Chorus (1)**

Maximum: 6 credits. Audition may be requested.

Mus 398**Jazz Lab Band (1)**

Performance of jazz literature in a big band setting. Maximum: 6 credits. Audition may be requested.

Mus 399**Special Studies (Credit to be arranged.)****Mus 401/501****Research (Credit to be arranged.)**

Consent of instructor.

Mus 404/504**Cooperative Education/Internship (Credit to be arranged.)****Mus 405/505****Reading and Conference (Credit to be arranged.)**

Consent of instructor.

Mus 407/507**Seminar (Credit to be arranged.)**

Consent of instructor. Recent topics have included Style Analysis; Style Criticism; Music History; Music in the Elementary School; Seminar in Composition.

Mus 408/508**Workshop (Credit to be arranged.)****Mus 409/509****Practicum (Credit to be arranged.)****Mus 410/510****Selected Topics (Credit to be arranged.)****Mus 420/520****Analytical Techniques (3)**

Study of the formal structure of musical compositions of various styles with the purpose of discovering the sources of unity, variety, order, and expression present in them. Prerequisites: Mus 311 is required for 420. Successful completion of the department's graduate entrance examination is required for 520.

Mus 421**Analysis of Contemporary Music (3)**

Thorough study of the compositional techniques and structural devices used in contemporary music. Topics include formal, harmonic, and rhythmic aspects of modern music. Serialism, set theory, texture, and indeterminacy are also addressed. Prerequisites: Mus 211, 212, 213.

Mus 424/524, 425/525, 426/526**Instrumental Jazz Arranging (2, 2, 2)**

In-depth study and application of the fundamentals of composing and arranging for small to large jazz ensembles. Subjects included are history, transposition, instruments, forms, harmonic and melodic construction, rhythm section, voicing, moving harmonization, score and part preparation, vocal arranging techniques, rehearsal techniques, and MIDI applications. Instructor approval required.

Mus 427/527**Opera Workshop (1)**

A workshop in preparing and performing operatic literature for advanced singers. Prerequisite: consent of instructor through audition.

Mus 428/528**Opera Production (2)**

Annual production of a major operatic work. Designed for singers, orchestral instrumentalists, and technical support staff in the areas of costuming, set design, and other areas. Casting for production is by audition during winter quarter.

Mus 430/530**Song Literature (3)**

Study of the solo literature for voice through analysis of scores and recordings and live performances. Historical perspectives from Elizabethan song to 20th-century art songs. Prerequisites: Mus 304, 305, 306.

Mus 431/531**Chamber Music Literature (3)**

Historical survey of the music associated with the chamber music repertoire from 1600-1950. Emphasis on analysis of scores and recordings. Prerequisites: Mus 304, 305, 306.

Mus 432/532**Band Wind Literature (3)**

A study of literature for ensembles of wind and wind/percussion instruments from about 1600 to the present. Historical perspective will be gained through reading, style-analysis, and listening. Attention will be given to the practical application of band literature in elementary and secondary teaching situations. Prerequisites: Mus 304, 305, 306.

Mus 433/533**Orchestral Literature (3)**

A historical survey of the music associated with the symphony orchestra from the development of each orchestral instrument to the present day. Intensive study of those works of great significance is achieved through score study and analysis of several interpretations through recordings. Attention will be given to the practical application of orchestral literature in elementary and secondary teaching situations. Prerequisites: Mus 304, 305, 306.

Mus 434/534**Choral Literature (3)**

This course offers an investigation and analysis of literature for choir of all sizes, for secular and sacred use, particularly in relation to use in public school at the junior high and high school levels and in church choir situations. A survey of the development of choral literature from c. 1400 to the present, with examples via listening and study of scores, will be included. Prerequisites: Mus 304, 305, 306.

Mus 436/536**Opera Literature (3)**

An intensive study of the development of opera in western music, from the works of Monteverdi in the early 17th century to the important operas of this century. Prerequisites: Mus 304, 305, 306.

Mus 437/537, 438/538**Keyboard Literature (3, 3)**

A study of Baroque, Classical, Romantic, and Twentieth Century literature for keyboard instruments. In addition to providing an overview of the historical development of keyboard music, specific works from the repertoire of each period will be selected for intensive study and performance. Intended primarily for piano or harpsichord majors. Prerequisite: by audition.

Mus 439/539*Instrumental Literature (3)**

An intensive study of the development of literature for various individual or groups of instruments (e.g., flute, clarinet, oboe, bassoon, saxophone, trumpet, horn, trombone, tuba, violin, viola, cello, bass, percussion, brass, woodwinds, strings). The course may be listed with the specific instrument in the title. Prerequisites: Mus 304, 305, 306.

Mus 441/541, 442/542, 443/543**Advanced Conducting (3, 3, 3)**

A study of technical and interpretative problems encountered in the rehearsal and conducting of standard symphonic or choral literature. Experience in conducting this literature. Particular attention given to the problems facing the public school music director. Prerequisite: Mus 321 or 322.

Mus 451/551, 452/552**Advanced Keyboard Skills (3, 3)**

This course investigates and applies advanced theoretical concepts to keyboard playing and improvisation. Applications include sightreading, transposition, harmonization, and figured bass reading. Prerequisite: by audition.

Mus 471/571, 472/572, 473/573**Advanced Jazz Improvisation (2, 2, 2)**

Advanced concepts of jazz improvisation. Principles of pentatonics, diminished harmonies, inside-outside playing, synthetic scales, and free improvisation. Instructor approval required. Prerequisites: Mus 271, 272, and 273.

Mus 474/574, 475/575**Midi Applications (2, 2)**

Study of the fundamentals of MIDI and computer music programs. Includes work on synthesizers, sequencing, and notation software. Prerequisite: consent of instructor.

Mus 481/581, 482/582, 483/583**Pedagogy (3, 3, 3)**

Methods, materials, curriculum, and philosophical bases for teaching in a private studio and classroom with focus on individual and group instruction. Prerequisites: Mus 213, 216, 304, 305, 306.

Mus 484/584**Music with Children (3)**

Methods and materials for teaching general music classes in the elementary school. Designed for the music specialist; required of all students who seek a basic teaching certificate in music. It is presupposed that all students have performing and theoretical skills and at least one year of music history. Concurrent enrollment in an appropriate practicum (Mus 409) required. Prerequisite: upper-division standing in music.

Mus 485/585, 486/586, 487/587**Diction for Singers: Italian, German, and French (2, 2, 2)**

Designed for singers and other musicians interested in classical vocal literature in Italian, German, and French. It presents the principles of lyric diction and provides practice in the skills needed to sing the language correctly, idiomatically, and expressively.

MuP 490**Applied Music (1-4)**

Senior year. Continuation of MuP 390. Maximum: 12 credits. Prerequisites: MuP 390 and audition.

MuP 491/591**Applied Music in Secondary Area (1-2)**

Private instruction in voice, keyboard, guitar, and orchestral or band instruments, not to include the student's major performance area in order to extend the performance skills of the music specialist in the public schools. Graduate students not passing MuP 590 audition will be assigned MuP 591.

Mus 503**Thesis (Credit to be arranged.)****Mus 506****Graduate Project or Recital (2-3)**

Final conducting project or performance recital required for all Master of Music degrees.

Mus 511**Music Research Methods (3)**

A systematic study of research techniques and materials in music history, literature, and music education. Emphasis on the use of library resources and practical applications of research techniques. Prerequisite: graduate standing in music.

Mus 512**Graduate Theory Review (3)**

A course designed for graduate students who need to review their knowledge of basic theoretical concepts. Can be taken for credit but will not be applied toward completion of degree requirements.

Mus 513**Score Reading (3)**

Techniques for reading and studying scores with a goal of performance.

Mus 517, 518, 519*Advanced Harmony (2, 2, 2)**

A study of the harmonic practices of the late 19th and 20th centuries. Written work, analysis, and theoretical research. Prerequisite: Mus 316.

Mus 521**Advanced Band Arranging (3)**

Designed to develop fundamental skills in arranging music for concert, marching and stage bands, and small wind and/or percussion ensembles, such as those encountered in the public schools. Transcription skills also will be studied. Emphasis will be on practical application of material presented. Prerequisite: successful completion of the department's graduate entrance examination.

Mus 522**Advanced Orchestral Arranging (3)**

Instruction in writing for instruments used in large orchestras, showing basic techniques of scoring for string quartet, woodwind and brass quintet, and percussion ensemble. Practical application through scoring of piano music for various orchestral groups of the nature and capability found in the public schools. Prerequisite: successful completion of the department's graduate entrance examination.

Mus 523**Advanced Choral Arranging (3)**

Study of voice types, text setting, and techniques of writing for various combinations of voices. Practice in arranging melodies for two-, three-, and four-part choruses, mixed and unmixed, such as those encountered in the public schools. Prerequisite: successful completion of the department's graduate entrance examination.

Mus 529**Grad History Review (3)**

A course designed for graduate students who need to review their knowledge of basic historical concepts of music. Can be taken for credit but will not be applied toward completion of degree requirements.

Mus 540**Jazz Literature (3)**

Advanced studies in Jazz History. Course involves individual research projects culminating in student class presentations. Historical research projects will be coordinated through PSU's Leroy Vinnegar Jazz Institute. Prerequisite: Mus 355.

Mus 560*Music History: The Medieval Period (2)**

Intensive, analytical study of the history of music of the Middle Ages and its relationship to contemporary historical events. Prerequisite: successful completion of the department's graduate entrance examination. Normally limited to graduate music majors only.

Mus 561*Music History: The Renaissance Period (2)**

Intensive, analytical study of the history of music from 1400 to 1600 and its relationship to contemporary historical events. Prerequisite: successful completion of the department's graduate entrance examination. Normally limited to graduate music majors only.

Mus 562*Music History: The Baroque Period (2)**

Intensive, analytical study of the history of music from 1600 to 1750 and its relationship to contemporary historical events. Prerequisite: successful completion of the department's graduate entrance examination. Normally limited to graduate music majors only.

Mus 563*Music History: The Classical Period (2)**

Intensive, analytical study of the history of music from 1750 to 1825 and its relationship to contemporary historical events. Prerequisite: successful completion of the department's graduate entrance examination. Normally limited to graduate music majors only.

Mus 564*Music History: The Romantic Period (2)**

Intensive, analytical study of the history of music from 1825 to 1900 and its relationship to contemporary historical events. Prerequisite: successful completion of the department's graduate entrance examination. Normally limited to graduate music majors only.

Mus 565*Music History: Early 20th Century (2)**

Intensive, analytical study of the history of music from 1900 to 1950 and its relationship to contemporary historical events. Prerequisite: successful completion of the department's graduate entrance examination. Normally limited to graduate music majors only.

Mus 566*Music History: Music Since 1950 (2)**

Intensive, analytical study of the history of music since 1950 and its relationship to contemporary historical events. Prerequisite: successful completion of the department's graduate entrance examination. Normally limited to graduate music majors only.

Mus 567**Jazz History (2)**

Advanced studies in Jazz History. Course involves individual research projects culminating in student class presentations. Historical research projects will be coordinated through PSU's Leroy Vinnegar Jazz Institute. Prerequisite: Mus 355.

Mus 588**Advanced Choral Methods (3)**

Designed for the experienced teacher. In addition to studies of current methods and trends in choral music teaching, the course also provides a forum for problem solving and dealing with special issues and problems in current choral music education.

Mus 589**Advanced Instrumental Methods (3)**

Designed for the experienced teacher. In addition to studies of current methods and trends in instrumental music teaching, the course also provides a forum for problem solving and dealing with special issues and problems in current music education.

Mus 590**Applied Music (1-4)**

Individual instruction in organ, piano, harpsichord, voice, guitar, and orchestral and band instruments. Maximum: 12 credits. Prerequisite: audition.

Mus 594**Chamber Music (1)**

Instruction in the art of small ensemble performance; the established repertory of string, wind, keyboard, or vocal chamber music. Maximum: 6 credits. Prerequisite: graduate standing in music.

Mus 595**Band (1)**

Maximum: 6 credits. Prerequisite: graduate standing in music.

Mus 596**Orchestra (1)**

Maximum: 6 credits. Prerequisite: graduate standing in music.

Mus 597**Chorus (1)**

Maximum: 6 credits. Prerequisite: graduate standing in music.

Mus 598**Jazz Lab Band (1)**

Performance of jazz literature in a big band setting. Maximum: 6 credits. Prerequisite: graduate standing in music.

Noncredit

Mus 46**Piano Proficiency Exam (No credit)****Mus 47****Final Project (No credit)**

All Bachelor of Arts and Bachelor of Science degree candidates must complete a final project consisting of one of the following: (1) a half recital, (2) a performance project, (3) regular performances on area recitals.

Mus 48**Junior Recital (No credit)**

Required for students in the Bachelor of Music in Performance program. Public recital during the junior year (30 minutes minimum).

Mus 49**Senior Recital (No credit)**

Music majors must present all or part of a recital during their senior year.

Theater Arts

127 Lincoln Hall
503-725-4612
www.theaterarts.pdx.edu/

B.A., B.S. in Theater Arts
Minor in Theater Arts
Minor in Film Studies
Secondary Education Program
M.A., M.S. in Theater Arts

Undergraduate programs

Through classroom study, studio/laboratory preparation, and University Theater production, the Department of Theater Arts is committed to providing liberal-arts based preprofessional training which imaginatively balances theory and practice. Students seeking professional or educational careers, preparing for advanced degree programs, or pursuing nonmajor study of the arts will participate in a production program encompassing new, modern, and classic works interpreted to confront and illuminate the diverse concerns of contemporary life.

Theater Arts faculty encourage a firm grounding in all aspects of theater and emphasizes the need for individual excellence. Faculty are active participants in the metropolitan and regional theater community and have worked and continue to work as actors, directors, designers, critics, and consultants for many of the area's professional theaters. Because of Portland State's urban location, students in the department have been able to work in and for local theater companies and are encouraged to do so.

Both majors and minors are urged to apply for an advising appointment at the Department Office (127 Lincoln Hall) during their first term at PSU, and no later than the beginning of their first term of junior standing.

Admissions requirement

Admission to the department is based on general admission to the University. See "Admission requirements" on page 45 for more information.

Degree requirements

Requirements for major. In addition to meeting the general University degree requirements, the major in theater arts will meet the following requirements:

	Credits
TA 111, 112 Technical Theater I and II	6
TA 114, 115 Technical Theater Production I and II..	2
TA 141, 142 Acting I and II	8
TA 252 Stage Makeup	2
TA 301 Script Analysis	4
TA 311 Scene Design I	4
TA 316 Technical Theater Lab	2
TA 321 Intro to Costume Design	4
TA 364 Directing I	4
TA 464, 465 Development of Dramatic Art I and II	8
12 credits chosen from the following:	12
TA 330 Multicultural Theater	
TA 467, 468 Modern Theater I and II	
TA 469 Women, Theater, and Society	
TA 471 Theater History: Periods/Topics	
TA 472 Theater History: Major Figures	
4 credits of TA 353 Workshop Theater II: Acting-Directing, TA 354 Workshop Theater II: Technical Theater, TA 355 Theater Workshop II: Management/Public Relations, with a maximum of 2 credits in any one. Workshop credits in excess of this maximum may be used to satisfy elective and general requirements.	4
20 elective credits from the theater arts curriculum with at least 12 carrying numbers 300 or above..	20
	80

Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling department major requirements.

At least 16 credits of upper-division theater arts courses, including 2 credits from TA 353, TA 354, and/or TA 355, must be taken in residence at Portland State University.

Requirements for minor in theater arts. To earn a minor in theater arts a student must complete 28 adviser-approved credits (12 credits must be taken in residence at Portland State University), to include the following:

	Credits
TA 101 or TA 305	4
TA 301	4
Theater Arts electives (at least 8 upper-division)	16
Four credits chosen from:	4
TA 464, 465 Development of Dramatic Art I and II	
TA 469 Women, Theater, and Society	
TA 467, 468 Modern Theater I and II	
TA 471, 472 Theater History	
	28

Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling department minor requirements, with the exception of

TA 101 Theater Appreciation, TA 131 Understanding Movies, and TA 135 Classic Movies.

Requirements for minor in film studies. Students may elect to pursue the minor in the Departments of Theater Arts, Communication, or English and should consult the department adviser for a complete list of courses that would apply to the minor from offerings in English, communications, and theater arts.

To earn a minor in film studies, students will be required to complete 28 adviser-approved film credits to include the following:

	Credits
TA 131 Understanding Movies or	
TA 135 Classic Movies	4
English 304 Critical Approaches to Cinema	4
Film studies elective courses in English, communications, and/or theater arts (at least 12 upper-division).....	20
	28

Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling department minor requirements. All courses for the minor must receive a grade of C or above. At least 16 credits of film studies courses must be taken in residence at Portland State University. Credits will be applicable to the student's major when appropriate.

Recommended courses in theater arts:

TA 131 Understanding Movies (4)
TA 135 Classic Movies (4)
TA 348 Acting for the Camera (4)
TA 370 Topics: Shakespeare on Film (4)
TA 370 Topics: American Cinema and Culture I and II (4, 4)
TA 370 Topics: Film Genres (4)
TA 370 Topics: Hitchcock (4)
TA 370 Topics: 1950s Media and Culture (4)
TA 370 Topics: Vietnam on Screen (4)
TA 370 Topics: The Seventies Film/Television Renaissance (4)
TA 370 Topics: Film Goes to War (4)
TA 370 Topics: Independent Films (4)
TA 370 Topics: Stardom (4)
TA 370 Topics: Gangster Films & Musicals (4)
TA 370 Topics: Film History I, II, III (4) (4) (4)
TA 408 Directing Actors for the Camera (4)
TA 474, 475 Dramatic Writing I and II (4)
TA 484, 485 Anatomy of a Movie I and II (4, 4)

SECONDARY TEACHER EDUCATION PROGRAM—DRAMA

Adviser: **W.M. Tate**

It is imperative that the student who wishes to teach theater arts in secondary school be in contact with the Department of Theater Arts secondary education adviser as early as possible, so that various options and requirements can be fully explained and a program of study developed.

Graduate program

Adviser: **R. Wattenberg**

The Theater Arts Department offers the degrees of Master of Arts and Master of Science. The Master of Arts degree prepares students who want to focus their graduate study on research and scholarship in the history, literature, and criticism of the theater and who may also plan to continue their graduate work in a doctoral program in theater. The Master of Science degree prepares for students who wish to focus more intensively on performance and production areas in preparation for a career in the professional theater and/or further degree work in a Master of Fine Arts theater program. The program of each graduate student is planned in consultation with the departmental adviser.

Admission requirements

A prospective student shall be admitted to graduate study after the department has reviewed the student's qualifications and recommended acceptance into the specific degree program.

The prospective M.A./M.S. graduate student who, after initial admission to the graduate program, does not enroll for classes within one calendar year shall have admission to the degree program canceled.

Degree requirements

University master's degree requirements are listed on page 70. Specific departmental requirements are listed below.

Master of Arts or Master of Science.

Prospective graduate students who plan to earn an M.A. or M.S. degree should present a minimum of 28 credits in theater arts, including 4 credits in script analysis, 8 credits in acting, 4 credits in directing, 8 credits in technical theater, and 4 credits in costuming, or equivalent competencies as determined by the department. Individual students may be required to complete additional graduate and undergraduate courses to make up for deficiencies.

All master's degree students must successfully complete a minimum of 45 graduate credits with at least 33 credits of approved courses in theater arts. Twelve credits may be taken in approved areas outside the Department of Theater Arts. In addition, the student must successfully complete one of the following projects, for which no fewer than 6 graduate credits in theater arts will be given: (1) a research

thesis on an approved topic from the fields of theater history, theory, practice, or dramatic literature and criticism; (2) two papers of appropriate length on subjects chosen from the fields of theater history, theory, practice, or dramatic literature and criticism; (3) a project in directing, scene design, lighting design, acting, or costume design; or (4) the composition of two one-act plays or one full-length play. An oral examination is required.

The Master of Arts student must demonstrate competence in the use of a foreign language and will typically complete the degree program with a thesis, playwriting, or two paper project. The Master of Science student must demonstrate expertise in skills pertaining to either advanced theater performance or design and will typically complete the degree program with a project in directing, acting, scene design, costume design or lighting design, a project in playwriting, or a two-paper project.

Courses

Courses with an asterisk () are not offered every year.*

TA 101 Theater Appreciation (4)

This course is intended as a general introduction to the art of the theater: acting; directing; playwriting; scenic, costume, and lighting design. Emphasis is placed on theater as a performing art today rather than upon the history or origins of the theater. The class, in part, involves attendance at live performances and events in the Portland area.

TA 111, 112 Technical Theater I, II (3, 3)

First term of sequence concerns the planning and building of sets and stage properties, and the production organization skills needed to mount theatrical productions. Second term adds elements of stage lighting, scene painting, and theater sound. Both terms require a three-hour lab period per week and participation in departmental productions presented that term. Must be taken in sequence.

TA 114, 115 Technical Theater Production I, II (1, 1)

Attached lab to TA 111, 112 will combine skills in practical construction of stage sets with actual production experience on department productions.

TA 131 Understanding Movies (4)

An introductory course in film appreciation with special emphasis on cinema as a dramatic art. Elements to be considered will include cinematography, performance, edited image, and sound. Selected films will be shown.

TA 135 Classic Movies (4)

Study and analysis of representative films with special emphasis on the importance of directori-

al concept and the screenplay. Relationships between film and theater will be examined.

TA 141, 142 Acting I, II (4, 4)

This sequence is concerned with both the method and the techniques of the actor. Must be taken sequentially. Students are urged to present themselves in public performance during the sequence.

TA 144 Voice for the Actor I (3)

An introductory course in basic principles and techniques of voice production specifically for stage performance including physiology, breath support and resonance, articulation and projection.

*TA 145 Acting Workshop (2)

Rehearsal, performance, and analysis of scenes directed by Directing I students for studio presentation and critique. Prerequisite: TA 141. Maximum: 6 credits.

*TA 146 Acting/Playwriting Workshop (3)

Readings, discussions, and walk-throughs of plays written by Playwriting II students. Prerequisite: TA 142.

TA 147 Movement for the Actor (3)

Introduction to concepts and techniques of theatrical movement and physical theater. Will utilize a variety of relaxation, centering, stylization, and imagery exercises designed to increase body awareness and expressiveness. Skills in ensemble, mime, mask, and light acrobatics will be developed.

TA 199 Special Studies (Credit to be arranged.)

*TA 241, 242 Improvisational Acting I, II (3, 3)

Seeks to acquaint the student through exercises, theater games, and study of basic techniques for creative role playing with the skills and techniques necessary for improvisational acting and development of material for public performance. Must be taken in sequence.

TA 252 Stage Makeup (2)

A study of the basic principles of the art and technique of stage makeup.

TA 253 Workshop Theater I (1-3)

Training in theater production through the intensive study and rehearsal of scenes and plays. Maximum: 12 credits.

TA 299 Special Studies (Credit to be arranged.)

TA 301 Script Analysis (4)

Examination and analysis of fundamental principles of dramatic structure, form, and style through study and analysis of representative plays selected from major periods. Emphasis on the production implications of selected texts.

**TA 305
Understanding Theater (4)**

An investigation of theater designed to develop a heightened awareness of how the theater arts express and communicate ideas and experiences. To expand critical awareness of the process by which theater creates meaning and communicates through performance to contemporary audiences. Course will examine the dynamic relationship between theater and the society it both mirrors and influences.

**TA 311
Scene Design I (4)**

A study of visual arts principles as related to scenic design. Projects in stage geography, design composition, and visual imagery are used to develop the student's communication skills in the area of scenic design. Prerequisites: TA 111, 112, 301, 316. Recommended: TA 114 and 115.

***TA 312
Scene Painting (3)**

Training to extend the student's basic skills in traditional methods and techniques of scene painting. Prerequisites: TA 111, 112. Recommended: TA 114, 115, and 316.

**TA 313
Scene Design II (3)**

Basic principles of scenic design for the theater. Prerequisite: TA 311.

***TA 314
Lighting Design I (3)**

Practical and theoretical study of lighting the stage. Developing student awareness of how light affects objects in the theater laboratory and the crafting of intelligent lighting plots. Prerequisites: TA 112, 301, 316.

**TA 316
Technical Theater Lab (2)**

Laboratory course designed to allow students to further develop stagecraft skills and gain additional practical production experience. Prerequisite: TA 111, 112. Recommended: TA 114 and 115.

**TA 317
Theater Technologies (2)**

The study and practical application of advanced techniques and materials in all aspects of stagecraft, including drafting and drawing for the scene shop, the organization and planning of scenery construction within a production calendar, and problem solving on current department productions. Prerequisites: TA 111, 112, 316. Recommended: TA 114, 115

**TA 321
Introduction to Costume Design (4)**

An introduction to the theory, techniques, and design principles of contemporary stage costumes. Prerequisites: TA 111, TA 301.

***TA 325
Costume Production (2)**

A study and practical application of stage costume construction techniques, beginning and advanced. Students will participate in the construction of costumes for departmental productions. Recommended prerequisite: 3 credits of theater arts. Maximum 6 credits.

***TA 326
Pattern Development (1-4)**

A study and practical application of the methods for creating patterns for theatrical costumes, including flat drafting, draping, and period pattern adaptation. Prerequisites: TA 325. Recommended: TA 321.

***TA 327
Costume Technology (1-4)**

A study and practical application of costume craft and decorative techniques, including fabric dyeing and painting and accessories fabrication. Recommended prerequisite: TA 321.

***TA 330
Multicultural Theater (1-4)**

Exploration of the diversity of our society through theater—comparing and contrasting the works of certain ethnic specific writers and those writers often considered to be in the mainstream of the modern theater.

**TA 341, 342
Intermediate Acting (4, 4)**

Study and practice in acting technique, scene analysis, and interpretation of dramatic materials for performance. Must be taken in sequence. Prerequisites: TA 141, 142.

***TA 344
Voice for the Actor II (3)**

An intermediate course in the principles of voice production for the stage, concepts and techniques for adapting the voice to various stage environments, and techniques necessary for analyzing stage speech problems and developing appropriate solutions. Prerequisite: TA 144.

***TA 346
Stage Dialects (4)**

An introduction to the method and techniques of dialect production for theatrical performance, including a survey of basic American, English, and European dialects.

**TA 348
Acting for the Camera (4)**

An introduction to acting before the camera for film and video. Prerequisite: TA 142.



TA 353**Workshop Theater II: Acting-directing (1-3)**

Workshop in acting-directing. Maximum: 6 credits toward major requirements. Prerequisite: consent of instructor.

TA 354**Workshop Theater II: Technical Theater (1-3)**

Workshop in technical theater. Maximum: 6 credits toward major requirements. Prerequisite: consent of instructor.

TA 355**Workshop Theater II: Management And Public Relations (1-3)**

Workshop in theater management and public relations. Maximum: 6 credits toward major requirements. Recommended prerequisite: consent of instructor.

TA 370**Topics: Theater, Media, and Culture (4)**

Study of a variety of dramaturgical, cultural, and historical issues as they appear in film, television, and other theatrical media. From quarter to quarter topics might include: Shakespeare on Film, '50s Media and Culture, American Cinema, American Culture, Vietnam on Film, Film History, Film Genres, and Hitchcock.

TA 399**Special Studies (Credit to be arranged.)****TA 401/501****Research (Credit to be arranged.)****TA 402/502****Independent Study (Credit to be arranged.)****TA 404/504****Cooperative Education/Internship (Credit to be arranged.)****TA 405/505****Reading and Conference (Credit to be arranged.)****TA 406/506****Special Projects (Credit to be arranged.)****TA 407/507****Seminar (Credit to be arranged.)**

Recent topics have included Introduction to Playwriting and Women, Theater, and Society.

TA 408/508**Workshop (Credit to be arranged.)****TA 409/509****Practicum (Credit to be arranged.)****TA 410/510****Selected Topics (Credit to be arranged.)*****TA 414/514****History of Decor (4)**

A historical survey of period decor focusing on furniture and interior architectural detail from Egyptian to modern times with emphasis on periods most commonly used in theater production. Recommended prerequisite: 6 credits of theater arts.

TA 421/521*Costume Design (3)**

An in-depth study of costume design principles. Emphasis is placed on the design of costumes for specific plays, using a variety of styles and rendering media. Prerequisite: TA 321. Recommended: TA 325.

TA 425/525, 426/526*History of Dress I, II (4, 4)**

Historical survey of dress in Western civilization from ancient Egyptian to modern times with emphasis on the aesthetic, cultural, and political expressions of clothing. Course may be taken out of sequence. Prerequisite: upper-division standing.

TA 430/530*Scene Design III (3)**

Advanced study of scenic design problems and concept development. Maximum: 6 credits. Prerequisite: TA 313.

TA 435/535*Lighting Design II (3)**

Advanced lighting design skills and techniques involving the practical application of script analysis and collaboration techniques while working in the department's Studio Theater lighting student-directed, one-act plays and/or participating in departmental stage productions. Prerequisite: TA 314. Maximum: 6 credits.

TA 441/541*Acting Studio (1-5)**

Advanced studio work and individual projects in acting to consist of analysis, preparation, rehearsal, and studio performance of dramatic material representing a range of forms and styles. Maximum: 18 credits. Recommended prerequisites: 16 credits of acting or equivalent plus instructor approval based on audition and/or interview.

TA 454/554**Directing I (4)**

Study and practice in play analysis and directing of scenes. Prerequisites: TA 111, 112, 142, 301. Recommended: TA 311, 321.

TA 455/555**Directing II (4)**

Advanced practice in analysis and directing of plays for public performance. Prerequisites: TA 111, 112, 316, 364. Recommended: TA 114, 115.

TA 460/560*Advanced Directing (3)**

Specific problems in directorial methods and styles for presentation in public performance. Prerequisite: TA 455 or equivalent experience.

TA 464/564, 465/565**Development of Dramatic Art (4, 4)**

Survey of dramatic literature and theater history from ancient times to the emergence of the modern theater in the 19th century. The course is chronological in its presentation but each term may be taken separately.

TA 467/567, 468/568**Modern Theater I, II (4, 4)**

A consideration of theater and drama from the late 19th and early 20th century to the present. Representative plays chosen from continental European, English, Irish, and American repertoires. Examination of key directors and trends in staging. Course may be taken out of sequence. Prerequisite: upper-division standing.

TA 469/569*Women, Theater, and Society (4)**

An examination of ways in which women and sexuality have been represented in Western theatrical production since the Greeks. Selected

topics will be analyzed relating feminist theories to the creation of the theater arts by women, with consideration of cultural contexts in which they work. Study of artistic practice by women in relation to issues of power, representation, and access.

TA 471/571**Theater History: Periods and Topics (1-4)**

Concentrated study of a particular period and/or topic in theater history: for example, Ancient Greek Theater and Drama, Medieval and Renaissance Theater, Theater and Science, Restoration/18th Century Drama, American Theater and Drama, and Theatrical Expressionism. Recommended prerequisite: TA 464 and 465 or appropriate sophomore inquiry course.

TA 472/572**Theater History: Major Figures (1-4)**

Concentrated study of the contribution of one or more major theater artists: for example, Ibsen, Stanislavsky, Appia, Brecht, and Artaud. Prerequisite: upper-division standing.

TA 474/574, 475/575**Dramatic Writing I, II (4, 4)**

A sequence in playwriting involving analysis of dramatic structure, practical application of playwriting techniques. Must be taken sequentially. Recommended prerequisite: 8 credits of TA and/or English.

TA 484/584*Anatomy of a Movie I: Product of the Studio Era (4)**

First in a sequence intended for advanced film students. Operates as a case study of one well known, critically acclaimed film of the studio era, examining the industrial, technical, cultural, and artistic elements in the film's production, exhibition and reception. Topics include studio ideology and production strategies, the star system, and historic context and meaning of films. Prerequisites: TA 131 and upper division standing. Recommended: TA 370 Film History I, II, III.

TA 485/585*Anatomy of a Movie II: The Independent Film (4)**

Second in a sequence intended for advanced film students. Operates as a case study of one well known, critically acclaimed film produced independently since 1968, examining the industrial, technical, cultural and artistic elements in the film's production, exhibition and reception. Topics will include the independent filmmaker as auteur, the economics of the New Hollywood, and ideology and politics of independent filmmaking, in the U.S. and abroad. Prerequisites: TA 131 and upper division standing. Recommended: TA 370 Film History I, II, III.

TA 503**Thesis—(Credit to be arranged.)****TA 511****Introduction to Theater Research (2)**

An introductory course in research methods and bibliography for graduate study in theater.

Graduate School of Social Work

KRISTINE NELSON, DEAN

EILEEN BRENNAN, ASSOCIATE DEAN

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M.S.W.

Ph.D.

The Graduate School of Social Work offers the only accredited graduate social work education programs in Oregon. The School was established at Portland State University in 1962 by a resolution of the Oregon Legislature. Two degree programs are offered by the School: a Master of Social Work (M.S.W.) degree, which is fully accredited by the Council on Social Work Education, and a Ph.D. degree in Social Work and Social Research.

In addition to the two degree programs, the school is composed of three other educational components: Extended Studies Program in Social Work, which offers non-degree programs; the Regional Research Institute for Human Services, a research facility developed by the Graduate School of Social Work for applied research and development, and the Child Welfare Partnership, a cooperative program with the State Department of Human Services.

Master of Social Work. The Master of Social Work degree program is designed to prepare graduates for entry into advanced practice in direct human services, community-based practice, or social service administration and management. Students may focus their studies on a selected field of service: mental health; children, youth, and families; older adults; health care; and services in the juvenile justice or adult correctional systems among others.

The curriculum combines concurrent on-campus coursework and field work in a range of human service organizations. Typical practice settings are mental health programs, public welfare and human service agencies, schools, hospitals and health care centers, courts, family service agencies, correctional services, community planning agencies, legislative offices, child

and youth service agencies, neighborhood centers, multicultural service centers, and programs for older adults. Each student's program of study consists of a combination of required and elective courses. The required core courses are in the following areas: (1) social work practice, (2) social welfare policy and services, (3) human behavior in the social environment, and (4) research. Core courses also cover content in the following areas: economic and social justice, populations at risk, ethics and values, and diversity. Additionally, students participate in field instruction during each of the two years of full-time study.

Four plans of study are available. In the two-year (six-term) option, students enroll in two or three courses and participate in a field practicum each term. In the three-year (nine-term) option, students enroll in two courses per term in the first year and complete additional courses and practica during the next two years. In the four-year option, students enroll in two classes per term in the first and third years and field practicum and one class per term in the second and fourth years. An advanced standing program is available to B.S.W. graduates of Council of Social Work Education accredited programs. Day and evening sections of many courses are available. In fall 2004 a three-year distance graduate education option was implemented. The program is located on the campuses of Chemeketa Community College in Salem and Southern Oregon University in Ashland, delivered through a combination of on-site instruction and interactive technology.

Also, a certificate in gerontology may be obtained through the Institute on Aging while the student completes requirements for the M.S.W. degree.



Doctor of Philosophy in social work and social research. The Graduate School of Social Work offers the Ph.D. in Social Work and Social Research. The program offers a unique opportunity to integrate practice, policy, and research. The program prepares students to understand critical social welfare problems, to conduct research and policy analysis related to solutions, to take responsibility for program development and administration in the human services, to teach, and to provide leadership. The Regional Research Institute for Human Services and the Child Welfare Partnership are major resources for the program.

Admission requirements

Master of Social Work. Students are admitted fall term only. Admission is selective; applications and all supporting materials must be submitted by February 1 for consideration for admission in September. Early submission of application materials is encouraged. Further information and application forms may be obtained by writing: Graduate School of Social Work, Portland State University, P.O. Box 751, Portland, OR 97207. The telephone number is 503-725-3949 or 725-4712. Application materials for the M.S.W. program are also available on-line through the school's Web site at: <http://www.ssw.pdx.edu>.

The M.S.W. program of the Graduate School of Social Work is open to qualified graduates from colleges and universities of recognized standing. Undergraduate preparation should include a broad background in liberal arts and sciences including human biology, social sciences, and humanities. Competence in written and spoken English is important for social work practice. Students whose native language is not English should include the scores of the Test of English as a Foreign Language (TOEFL). Graduates of bachelor of social work (B.S.W.) programs accredited by the Council of Social Work Education may apply for advanced standing. Students who have completed up to one year of study toward the M.S.W. degree at another graduate school of social work accredited by the Council on Social Work Education may apply for admission and transfer of credits.

Students admitted to the master's program are required to be in continuous enrollment unless an approved leave of absence has been granted. A student who withdraws from the School must reapply.

Doctor of Philosophy in social work and social research. Applicants for admission to this program must have a master's degree in social work or have a master's degree in a related field enhanced by experience in the field of social welfare.

Students with a master's degree in another field may enter a combined program, in which they work simultaneously toward the M.S.W. and Ph.D. degrees. Applicants must have writing ability and the capacity for creative and independent work. At least two year's practice experience in social work or a related field is recommended. Students must apply to and be accepted into the doctoral program after admission to the University as a graduate student. As part of the admission procedure, students must furnish:

- transcripts of undergraduate and graduate studies;
- scores for the Graduate Record Examination (GRE);
- an example of scholarly writing;
- names of four references, two of whom must be academic; and
- a personal statement.

Students whose native language is not English should include the scores of the TOEFL. Application materials for the Ph.D. program are available through the school's website at: <http://www.ssw.pdx.edu>.

Application must be made by January 15; admission to the program is for the fall term only.

Residence. The program will require the equivalent of approximately three year's full-time work to complete if the student enters with an M.S.W. Three consecutive terms must be spent in full-time residence (9 credit hours or more) on campus. The minimum credit hour requirement for the Ph.D. is 90, of which at least 27 must be devoted to the dissertation. The Portland State University general doctoral degree requirements are listed on page 71.

Degree Requirements

Master of Social Work. The M.S.W. is a 90 credit program in two levels. The first, or foundation level, can be satisfied in one of two ways:

1. Completion of a B.S.W. degree accredited by the Council on Social Work Education, plus additional requirements specified by the Graduate School of Social Work, or
2. Completion of a 42 graduate credit foundation course sequence at PSU, which includes the following courses: SW 500 Field Instruction (6 credits each of three terms), SW 520 Social Work and Social Welfare Policy (4 credits, fall term only), SW 530, 531, 532 Generalist Social Work Practice (4 credits each of three terms), SW 540 Human Behavior in the Social Environment (4 credits, winter term only), and SW 550 Foundation of Social Work Research (4 credits, spring term only).

The second, or advanced level, involves an additional 48 credits of advanced graduate coursework in concentration requirements, electives, and advanced research.

The Portland State University general master's degree requirements are listed on page 70.

Doctor of Philosophy in social work and social research. The course of study is focused for each student by analysis of a specific social problem. The course of study consists of three major components: required and elective coursework; required and elective practicum experiences; and dissertation research. A comprehensive examination must be passed. An oral dissertation proposal defense and a dissertation defense provide opportunities for examination of the area on which work has focused.

Course requirements. Each doctoral student is required to select a social problem for study. The student will become knowledgeable about the theoretical background of the problem and proficient in the methodologies appropriate to study it.

The coursework for the program consists of three elements: core requirements designed to ensure a solid foundation in the history, theory, and organization of social responses to social problems; quantitative and qualitative social research methods and statistics and supervised research practicum experience; and elective courses related to the student's plan of study. Students declare a cognate area and must take 8 credit hours outside of the Graduate School of Social Work in that substantive area. Each student's program will be individually planned and approved. Students in the first and second years of the program are required to attend a Ph.D. seminar that is open to all Ph.D. students and faculty.

A research practicum is required. This involves participating in research under the direction of a qualified supervisor. A teaching practicum may be elected.

Comprehensive examination. A written comprehensive examination is taken in two parts. The first part is taken after completion of foundation coursework. The second part is written when coursework is substantially complete.

Dissertation. After successful completion of the comprehensive examination, the chairperson and dissertation committee are appointed. The student develops a dissertation proposal which is defended orally before the dissertation committee and other interested faculty and students. When the proposal has been approved by the dissertation committee and by the University Human Subjects Research Review committee, the student is considered a candidate for the Ph.D. in social work and social research. A dissertation must be completed following the outlines of the approved proposal. Students must maintain continuous registration while engaged in dissertation research.

Final examination. At the completion of doctoral work, the student defends the completed dissertation before the dissertation committee and other interested faculty and doctoral students. The student is expected to demonstrate knowledge of the topic selected for study, and to show that the dissertation is a contribution to knowledge in the problem area.

Extended Studies. In cooperation with professional organizations, the Extended Studies Program in Social Work is prepared to provide conferences, lectures, new career learning, and recent information on practice, human behavior, policy, management, supervision, and ethics. Further information may be obtained by writing the Graduate School of Social Work, Portland State University, P.O. Box 751, Portland, OR 97207 or through the GSSW Web site at www.ssw.pdx.edu.

Courses

Courses with an asterisk () are not offered every year.*

SW 301

Introduction to Social Work (4)

An introduction to the profession and practice of social work. Assists students to clarify decisions concerning selection of social work as a profession; relates beginning social science theory to the profession. Prerequisites: 4 credits of psychology and 4 credits of sociology.

SW 399

Special Studies (Credit to be arranged.)

SW 405

Reading and Conference (Credit to be arranged.)

Consent of instructor.

SW 407

Seminar (Credit to be arranged.)

Consent of instructor.

SW 410

Selected Topics (Credit to be arranged.)

Restricted to students in the Child and Family Studies degree program.

SW 465/565

Introduction to Indian Child Welfare and the Indian Child Welfare Act (4)

Introduction to Indian child welfare with an emphasis on understanding legal, historical, and cultural issues applying to work with American Indian and Alaskan native youth. Emphasis is on Indian child welfare issues in the Pacific Northwest.

SW 500

Field Instruction I-VI (Credit to be arranged.)

SW 501

Data Analysis in Social Work Research (Credit to be arranged.)

Focuses on advanced techniques of qualitative and quantitative data analysis/interpretation for social work practice and program evaluation. Emphasis on comparing, contrasting, and combining these processes of social research, including conceptualization, operationalization and measurement, sampling, data collection, data analysis, probability, and descriptive and inferential statistics. Introduction to the production of research through secondary analysis and/or original research. Prerequisite: SW 550.

SW 502

Laboratory (Credit to be arranged.)

SW 503

Thesis I, II III (Credit to be arranged.)

SW 504

Cooperative Education/Internship (Credit to be arranged.)

SW 505

Reading and Conference (Credit to be arranged.)

SW 506

Special Problems (Credit to be arranged.)

SW 507

Seminar (Credit to be arranged.)

SW 508

Workshop (Credit to be arranged.)

SW 510

Selected Topics (Credit to be arranged.)

SW 520

Social Work and Social Welfare Policy (4)

Course defines and describes social welfare policy and the policy-making process. Examines historical and contemporary issues and their impact on the profession of social work and the institution of social welfare. Emphasis is given to policy analysis and the development of policy-practice skills from the perspective of social and economic justice. Highlights the relationships between social problems, social policies, social programs, and social work practice.

SW 522

Issues in Child Welfare (4)

Discusses the rapid change in the goals and methods of child welfare agencies, those agencies charged with the protection of children and the provision of permanency in their lives. Analysis of the formation of policy to reflect empirically based knowledge, ever changing community forces, and developing practice wisdom. Explores major issues facing child welfare services today. Develops skills for policy change. Prerequisite: SW 520.

SW 523

Health Care Policies and Programs (4)

Advanced policy course analyzes the history of selected health care policies, programs, and disease categories within the context of social work practice in health care. Contemporary outcomes in current health and service delivery systems presented from a policy perspective. Develops skills for policy change. Prerequisite: SW 520.

SW 524

Community Organization (4)

Presents community organizing as a well-established social work method for promoting social change and improving community life through community and institutional reform. Topics for class will include an overview of the history of community organizing, models of community change (locality development, social planning and social action), methods of social change (advocacy, mobilizing, organizing, coalition building, and partnership), examples of community-based organization, leadership development, and measuring the benefit to communities. Discussion also includes understanding the role of power and culture that exists within neighborhoods and communities. Prerequisite: SW 520.

SW 525/625

Poverty: Policies and Programs (4)

Examines the nature and causes of poverty and inequality in the United States and the impact of economic globalization on social work's response to these critical social problems.

Studies ways in which people in poverty cope and support each other in low-income urban neighborhoods; examines the ways in which work and welfare interact with each other and with informal social supports. Addresses policy issues, including those involved in both service and income strategies to relieve or prevent poverty; develops skills for effective practice with low-income communities, families, and individuals. Prerequisite: SW 520.

SW 526

Social Work and the Law (4)

Topics include an overview of the legal system, the legal basis of the professional relationship, confidentiality and legal privilege, informed consent, the right to treatment and entitlement of mentally disabled and HIV positive persons, professional malpractice and other legal liabilities—including termination and abandonment—social welfare law, family law and adoption, and unlawful discrimination. Prerequisite: SW 520.

SW 530

Generalist Social Work Practice I (4)

Overview of the major influences on the service delivery system with special emphasis on the multiple roles of the generalist social worker, social work values, and ethics. Development of interviewing skills with focus on engagement, development of rapport, definition of purpose, and advocacy. Introduction to theory and the change process at five levels of social work practice: individual, family, group, organization, and community. Special attention to the issues of cultural diversity and populations at risk. Based on the strengths and ecological systems perspectives. Corequisite: SW 500.

SW 531

Generalist Social Work Practice II (4)

Based on the generalist social work practice principles, assessment and goal formulation aspects of the change process emphasized at multiple levels: individual, family, group, organization, and community. Family-centered approach is focused upon. Development of interviewing skills related to assessment with cultural considerations. Collaboration and teamwork examined. Introduction to evaluation. Application of strengths and ecological systems perspectives to assessment. Prerequisite: SW 530; corequisite SW 500.

SW 532

Generalist Social Work Practice III (4)

Based on the generalist social work practice model, intervention and evaluation at multiple levels: individual, family, group, organization, and community. Family-centered approach with emphasis on strategies of promoting empowerment, equity, and social justice. Development of interviewing skills for intervention and role disengagement. Examination of the entire change process with focus on evaluation strategies and technologies. Prerequisite: SW 531, corequisite SW 500.

SW 533

Advanced Practice for Direct Human Services I (4)

Reviews the problem-solving process and introduces the process of constructing a frame of reference or model of practice. Addresses the evaluation of practice and theories for understanding individuals and how they both seek and resist change. Application of theories to the direct social work practice process with consideration of the importance of culture, strengths,

and empowerment. Prerequisite: SW 532; corequisite: SW 500.

**SW 534
Advanced Practice for
Direct Human Services II (4)**

Addresses the family of origin perspective on family systems theory. Both the worker's and the client's families of origin considered as sources of influence on the intervention process. Provides advanced consideration of family centered practice and integration of other theories with family systems theory. Prerequisite: SW 533; corequisite: SW 500.

**SW 535
Advanced Direct Human
Services Seminar (2)**

Integrates material covered in Advanced Practice for Direct Human Services I and II, resulting in student's development of a personal model of practice. Supervision, continued professional development, and licensing also addressed. Prerequisite: SW 534; corequisite: SW 500.

**SW 536, 537
Advanced Community-
Based Practice I, II (4, 4)**

Emphasizes the person-environment interplay with a focus on collaborative partnerships between local citizens, leaders, associations, and institutions. Discusses assessment, planning and intervention at the individual, family, neighborhood, and service delivery system levels. Utilizes an assets-based, community development perspective to assist individuals, families and communities in identifying and meeting community needs. Focuses on working as a team, utilization of community resources, and selection of appropriate intervention strategies. Explores individual and community resilience while assisting in implementing local strategies that strengthen protective factors and lower risk factors for ethnically and culturally diverse families, schools, neighborhoods and communities. Prerequisite: SW 532; corequisite: SW 500.

**SW 538
Advanced Community-based Practice:
Evaluation and Analysis (2)**

Provides integrative experiences and materials building on and supportive of SW 536/537. Emphasis is placed on skills and techniques for the evaluation of community-based practice; analysis of an articulation of the student's personal model/framework of reference for community-based practice; and strategies for post-master's professional development of and contributions to the student's field of community-based practice. Prerequisites: SW 536 and 537.

**SW 540
Human Behavior in the Social
Environment (4)**

Examines the biological, psychological, social, and cultural factors interacting across the life course from infancy to old age from an ecological systems perspective. Discusses and critiques major theoretical approaches to human development in its social and cultural contexts. Considers populations at risk and the impacts of racism and other forms of oppression on development. Emphasis on the sources of diversity such as ethnicity, race, gender, sexual orientation, and handicapping conditions.

**SW 545/645
Advanced Theories of Human Behavior in
the Social Environment (4)**

Provides an opportunity for students to explore current theoretical developments in the social

and behavioral sciences which apply to social work practice including populations at risk. Taught in different sections each of which covers social and cultural contexts for human behavior in the social environment. May be repeated for additional credit. Prerequisite: SW 540.

**SW 546
Human Sexuality and Social Work (4)**

Physiological, psychological and cultural perspectives of human sexuality presented and discussed. Application of social work assessment and change strategies relevant to personal and interpersonal dynamics of sexual and intimacy concerns. Prerequisites: SW 532, 540.

**SW 550
Foundation of Social Work Research (4)**

Introduction to research in social work. Stresses the importance of research to social work practice and policy. Introduction to qualitative and quantitative social work research, group designs, single case studies, and evaluation of programs and of practice. Introduction to critical consumption of research, to ethics of social work research. Considers scientific method, systematic inquiry, relation of theory to research, problem formulation, measurement, sampling, design, and data collection.

***SW 554
Social Work and Health Care (4)**

Presents an overview of social work across health care settings and systems. Physiological, psychosocial, and cultural components of illness considered for individuals, families, and groups. Multidisciplinary teamwork, crisis intervention, and ethical dilemmas in health care practice explored. Prerequisite: SW 532.

**SW 555
Social Work Perspectives on Mental Health
Disorders (4)**

Explores the major mental disorders from an understanding of the biological, psychological, social, and cultural determinants of mental illness. Emphasis given to the changing roles of social workers who work with people diagnosed with a mental illness. Topics include history and theories of mental illness, DSM IV classification systems, biopsychosocial model assessment which includes diagnostic interviewing, specialty topics (e.g., homelessness, poverty) and critique of conventional and emerging empirical perspectives. Prerequisites: SW 532, SW 540.

**SW 557
Social Work with Depressed Clients (4)**

Depression is the leading mental health problem known today. Because depressive disorders are characterized by a complex of biological, psychosocial, and intrapsychic components, this course will take a multi focal approach to assessment and treatment. The goal is for students to be able to determine the most effective interventions for particular subgroups of depressed clients. Includes dual diagnosis and suicide assessment. Prerequisite: SW 532.

**SW 558
Abuse and Trauma: Theory
and Intervention (4)**

Examines the impact of trauma and abuse on adults, children, and families. Acute and long-term sequelae will be identified, emphasizing the interaction of traumatic and developmental effects. An integrative biopsychosocial intervention model for working with individuals, groups, and families will be explored through crisis and trauma, psychodynamic, constructivist, narrative, and feminist theories. Policy practice and

advocacy issues, ethical and ideological issues, and current clinical, research, and policy debates in the field will be identified and discussed. The relationship of clinical narrative to contemporary social discourse about abuse and trauma will set the framework for the course, including clinical and empirical knowledge regarding effects of abuse and trauma and efficacy of treatment. Prerequisites: SW 532, SW 540.

***SW 560
Social Work with Lesbians, Gay Males,
and Bisexuals (4)**

Designed for social work students who want to acquire information on social work with and on behalf of lesbians, gay men, and bisexuals. Educates students to problems lesbians, gay men, and bisexuals face as the result of oppression as well as to the strengths and resilience of this population. Provides academic and experiential content necessary for: understanding the culture and social reality of lesbian, gay and bisexual people; examining societal and internalized homophobia and heterosexism; developing practice skills, and identifying policy issues relevant to lesbian, gay, and bisexual rights.

***SW 561
Clinical Social Work with Groups (4)**

Deals with the theory and practice of clinical social work within the wide range of groups in which social workers participate as workers and co-workers. Articulates issues related to group process and development as to their effect on the group experience. Includes leadership strategies and diverse populations. Prerequisites: SW 532.

***SW 562
Social Work with the Dying
and Their Families (4)**

Examination of death at all stages of the life cycle with exploration of its effects on the individual, the family, and the helper. Review of theory and research about grief and reconsideration of schema about grief resolution. Coping emphasized, given unique cultural and religious differences. Consideration of the role of technology in end-of-life decision making. Discusses social service assistance for persons with HIV/AIDS, their families, partners, and friends. Prerequisite: SW 532, 540.

**SW 563
Social Work with Children, Adolescents,
and Their Families (4)**

Focuses on hands-on social work practice and clinical skills working with children, adolescents, and their families in various environments, including outpatient mental health, schools, and residential settings. Individual, group, and family modalities addressed. Prerequisite: SW 532.

***SW 566
Staff Development and Supervision (4)**

Supervision and staff development presented and examined in relation to direct management and community-based social work practice. Roles of supervision in a variety of contexts addressed. Models and techniques compared and integrated with relevant theoretical perspectives. Prerequisite: SW 532.

**SW 567 Evidence Based Interventions for
Community Mental Health Practice (4)**

Reviews and critiques evidence-based interventions for community-based mental health populations. These interventions include supportive employment, assertive community treat-

ment/case management, psychosocial rehabilitation, psychopharmacology, recovery and consumer perspectives, and integrated treatment for co-occurring substance use disorders. Theoretical frameworks include harm reduction, transtheoretical/readiness to change, and health promotion. Prerequisite: SW 532.

SW 568
Developing Culturally Competent Child Welfare Practice (4)

Examines current practice strategies for social workers serving families that have experienced the effects of child abuse and neglect. Critical thinking as the mechanism for evaluating and implementing approaches such as strengths need-based interventions, family preservation modalities, and cross-cultural practice. Specific assessment and intervention strategies include ethnographic interviewing, brief interventions, current practice techniques that address issues of attachment, and solution-focused techniques. Overrepresentation of oppressed groups, with special emphasis on ethnic and sexual minorities, within the child welfare system analyzed from an international perspective. Implications for policy change discussed. Prerequisite: SW 532.

SW 571
Social Work with Alcoholics, Substance Abusers, and Their Families (4)

Designed to provide students with foundation knowledge in direct social work practice with substance abusers and their families. The primary goal is to assist students in further development and application of knowledge learned in prior methods courses to their work with substance abusers and their families. Prerequisite: SW 532.

SW 574
Social Work with the Frail Elderly (4)

Focuses on social work with the frail and vulnerable aged. Social, psychological, physical, and environmental aspects of frailty and vulnerability in old age are studied, and social work interventions with this population are explored.

***SW 575**
Ethnic Competence in Social Work Practice (4)

Examines different perspectives on acquiring ethnic competence. Reviews different practice methods such as ethnic sensitive practice, cultural awareness, counseling cross culturally and culturally competent practice. Each of the approaches will be examined to determine their relevance, foci, and methods for promoting services which are sensitive to, and appropriate in, the cultural context of the client system. Employs a systems framework for understanding the impact of cultural differences on the helping process. Students will also learn how values and customs of the larger society shape experiences and life chances for ethnically diverse people.

SW 578/678
Social Work in the Juvenile and Criminal Justice Systems (4)

Grapples with the problem of criminal and delinquent behavior. Considers current controversies concerning the origin and meaning of the behavior; the socio-economic and multicultural characteristics of contemporary life contributing to delinquency and crime; social work's role in the "people-processing system"; the major current treatment modalities and inquiry into their effectiveness; social policy

issues confronting the juvenile justice system; and current policy and practice trends toward incarceration and away from rehabilitation. Prerequisite: SW 520.

SW 580
Social Service Administration (2)

Theories of client-centered and family-centered social work in complete organizations that promote social and economic justice. Value and ethical considerations in decision-making and issues in developing leadership and accountability in multicultural environments. Prerequisite: SW 532.

SW 581
Understanding Program Management (2)

Applied behavior and systems theories and management of change strategies and interventions at program and inter-organizational levels. Covers managed care principles, internal advocacy skills, collaboration, supervision, and social service program budgets.

SW 582
Supervision and Human Resources (2)

Management skills for effective hiring process and procedures, staff supervision and discipline, working with an organized workforce, staff ethics policies, sexual harassment, Equal Employment Opportunity laws, and creation of organizational culture in social service agencies.

SW 583
Issues in Human Service Organizational Management and Leadership (2)

The social work manager in middle management and leadership positions in both not-for-profit and public sector human services organizations. Management philosophy, understanding leadership styles in complex organizations, team building, work with governance boards, participation in organization planning, fundraising, program accountability and evaluation. Prerequisite: SW 580.

SW 584
Program Development and Design (4)

How to develop programs and change agency policy for social services. Examines alternative methods to identify problems and assess needs. Technical aspects of setting goals, establishing priorities, describing program activities, and program advocacy and evaluation. Prerequisites: SW 520 and 532.

SW 585
Fundraising, Grantwriting, and Human Services Entrepreneurship (2)

Concrete fundraising strategies, grant writing, and creation of innovative programs, business plans, and marketing strategies for social service agencies. Program development and budgeting, case statement, grant strategies and application, and donor cultivation and solicitation.

SW 601
Research (Credit to be arranged.)

SW 603
Dissertation (Credit to be arranged.)

SW 605
Reading and Conference (Credit to be arranged.)

SW 607
Seminar (Credit to be arranged.)

SW 610
Selected Topics (Credit to be arranged.)

SW 620
Social Problem Analysis: Assessment Phase (3)

First in a three course sequence. Focuses on the assessment phase of the problem solving process applied to the student's selected social

problem. Emphasis on gathering the information necessary for a comprehensive analysis of the social problem. Involves examination of the major models of society and relevant cultural, historical, and policy-practice issues.

SW 621
Social Problem Analysis: Intervention Phase (3)

Intervention phase of the social problem solving process applied to the student's selected social problem. Focus is on the development of a multi-level intervention plan based on review of empirical literature. Program theory and theories of change will be explored. Analysis of policy-level interventions and related effectiveness literature. Construction of logic models. Integration of policy and practice will be emphasized. Prerequisite: SW 620.

SW 622
Social Problem Analysis: Evaluation Phase (4)

Evaluation phase of the problem solving process applied to social problems. Focus on evaluation of decisions and their implementation in social agencies. Multi-level monitoring (population-at-risk, programs, and client) taught as part of continuing intervention planning. Attention given to developments in client tracking, quality control, multi-level impact analysis, policy/practice outcome measurement, research design and statistical analysis. Internet search techniques and database management techniques taught. Reformulation of problems as the outcome of evaluation to help students tie together the phases of problem solving. Prerequisite: SW 621.

SW 630
Empirical Foundations of Knowledge Building in Social Work (3)

Examines the assumptions and conceptual foundation of research in social work. Application of alternative research paradigms to questions important to social work. Context of community and social agency emphasized. Ethical issues of participation of vulnerable populations considered. Exploration of social implications of use of research findings.

SW 631
Introduction to Quantitative Research Methods in Social Work (2)

Introduces students to basic quantitative methods for applied social work research and examines the assumptions underlying quantitative methods. Experience in applying quantitative methods by developing a proposal for a social work research project. Emphasizes the appropriate use of quantitative and qualitative methods, ethical and cultural issues in quantitative social work research, and application of methods at micro- and macro-levels of social intervention.

SW 632
Empirical Methods of Data Analysis in Social Work Research I (4)

Provides preparation in the selection of research designs and statistical methods appropriate for social work research questions. Discusses descriptive and inferential statistical methods common in social work research and considers validity and reliability issues in measurement. Empirical social work studies analyzed and discussed. Includes an application and analysis laboratory. Prerequisite: SW 630, 631.

SW 633
Introduction to Qualitative Research Methods in Social Work (2)

Introduces students to qualitative methods for applied social work research. Examines assumptions underlying qualitative methods and com-

compares different qualitative traditions. Students will gain experience in applying qualitative methods in social work by developing a proposal for a qualitative research project. Emphasizes qualitative methods for understanding cultural issues and giving voice to marginalized populations. Reviews ethical considerations in qualitative research in social work. Prerequisite: SW 630.

SW 634
Empirical Methods of Data Analysis in Social Work Research II (4)

Using existing data bases from social service agencies and studies at the Regional Research Institute, course provides substantial laboratory experience in data analysis and interpretation. Emphasis placed on strategies of analysis, including multivariate and nonparametric techniques, with comparison of findings obtained by alternative statistical procedures. Additional emphasis on interpretation and presentation of analysis to highlight policy implications. Prerequisite: SW 632.

SW 640
Research Practicum Seminar (2)

Seminar designed to enable students to explore together their experiences in their respective research projects. Students will gain appreciation of the entire process as well as a deepening knowledge through comparison of experiences. Pass/no pass only. Prerequisite: SW 634.

SW 641, 642
Research Practicum (Credit to be arranged.)

Participation in a research study under the supervision of appropriate faculty. Opportunity to master research skills which fit the student's learning needs. Time on site working on the project is 200 hours: this can be in a block or spread over up to three quarters, the pattern to be determined by student and principal investigator on the project. Portfolio of research experiences developed. Prerequisite: SW 634.

SW 650
History and Philosophy of Social Welfare and Social Work (3)

History, philosophy, and ethics of social welfare and social work. Focus is on the interaction of social work and social welfare developments with wider economic, social, and political forces. Major philosophical, theoretical, and political issues, the growth and impact of professionalization, and the development of social work methods. Traces historical changes in social work's identification of and response to vulnerable populations.

***SW 651**
Integrative Writing Seminar (2)

Course addresses integration of social work theory, practice, policy, and research. Synthesis developed through writing of manuscript for submission to professional journal, a grant application, or other suitable product. Assistance with submission provided. Prerequisite: completion of Part I of comprehensive examinations.

SW 660
Ph.D. Seminar (1)

Discusses current research studies undertaken in the field of social work. Based on published articles, working papers, and research project materials, the seminar features presentations by social work faculty, graduate students, and community partners. Considers practical aspects of applied research, including methodological issues, cultural competency, consumer involvement, and interdisciplinary collaboration. May be repeated for additional credit.

***SW 690**
Teaching Practicum (2)

Focuses on the practical aspects of teaching in the social work field. Salient theoretical and practical issues in adult learning explored. Considers the fundamental ideas of social work education. Discusses curriculum planning and issues around human diversity and teaching. Distance learning issues and techniques examined. Supports student teaching experiences.

SW 700
Postbaccalaureate Professional Development (Credit to be arranged.)

Child Welfare Partnership

520 SW Harrison
503-725-8010

Katharine Cahn, Executive Director

In 1994, the Graduate School of Social Work, the State Office for Services to Children and Families (now the Department of Human Services [DHS]), and the School of Extended Studies entered into a partnership aimed at improving the delivery of child welfare services to abused and neglected children and their families throughout Oregon.

The Child Welfare Partnership consists of three interdependent components:

1. graduate social work education;
2. child welfare training programs; and
3. child welfare research and evaluation.

The graduate social work education component provides advanced education through a master's degree for DHS employees and PSU graduate students interested in public child welfare careers. The partnership trains DHS staff and caseworkers who provide services to families and children. Foster and adoptive parents also receive training through this program. The Child Welfare Partnership provides applied research and evaluation for improvement of child welfare programs. All components of the partnership are jointly administered by DHS and PSU.

The partnership is a national model for restructuring human service delivery. It improves opportunities for current child welfare workers who wish to gain additional professional training, it directs new social work graduates into public service, and it enhances professional and training curriculum through the use of research and evaluation.

Further information may be obtained by writing to the Child Welfare Partnership, Portland State University, P.O. Box 751, Portland, OR 97207 or visiting the Web site at <http://www.cwp.pdx.edu>.

Regional Research Institute for Human Services

1600 SW 4th Ave., Suite 900
503-725-4040

N.M. Koroloff, Director

The Regional Research Institute for Human Services was established in 1972 by the Graduate School of Social Work at Portland State University with a grant from the Social and Rehabilitation Service (HEW). The RRI has undertaken more than 125 projects, many of them national in scope, in such fields as child and adult mental health, family and child welfare, child care, employment, juvenile justice, alcohol and drug services, rehabilitation, and self-help and support groups. A national program of research in the field of mental health was initiated in 1984 when the Research and Training Center on Family Support and Children's Mental Health began. This RTC was recently refunded until 2009.

In 2000, the Robert Wood Johnson Foundation established a national program office at the Regional Research Institute—Reclaiming Futures: Building Community Solutions to Substance Abuse and Delinquency. The mission of this five-year, \$21 million initiative is to promote new standards of care in juvenile justice for young people with drug and alcohol problems. Reclaiming Futures makes annual grants of up to \$250,000 to 10 pilot projects across the country, provides technical assistance, sponsors a national leadership program, facilitates communication, and carries out research.

The institute enjoys a base of support from the University and has received more than \$54 million in grants and contracts.

The aim of the institute is to improve the manner in which social services and service delivery systems are designed, managed, and evaluated. Motivated by a concern for social change, the institute is prepared to examine all aspects of the complex process by which human service policies and services are initiated and modified. By bringing a range of consumers, family members, and researchers into its activities, the institute creates new approaches to old problems. It strives to set high standards for applied social research and to provide a research environment for graduate training.

College of Urban and Public Affairs

LAWRENCE WALLACK, DEAN
CRAIG WOLLNER, ASSOCIATE DEAN
750 URBAN CENTER, 503-725-4043
www.upa.pdx.edu/

**B.A., B.S., M.S.—Criminology and
Criminal Justice**
B.A., B.S.—Health Studies
B.A., B.S.—Community Development
B.A., B.S.—Political Science
**Minors in Criminology and Criminal
Justice; Community Development;
Health; Political Science; Real Estate
Development**
Graduate Certificate in Gerontology
**Graduate Certificate in Real Estate
Development**
M.A., M.S.—Health Studies
M.A., M.S.—Political Science
M.P.A.
M.P.H.
M.U.R.P.
M.U.S.
Ph.D.—Public Administration and Policy
**Ph.D.—Urban Studies, Urban Studies:
Regional Science**

The College of Urban and Public Affairs at Portland State University allows students with interests in urban problems and processes to take advantage of the resources of an urban university situated in a major metropolitan area. Opportunities for urban education are available through nine graduate degree programs and four undergraduate degree programs. Undergraduate students may also complement any bachelor's degree offered by the University with a minor in community development, political science, or health studies by simultaneously conforming to their curricular requirements.

The B.A. or B.S. degree in criminology and criminal justice prepares students for a variety of public service careers in the criminal justice system. The B.A. or B.S. in health studies provides training for many professional careers in health promotion and health education. In addition, a student may add coursework necessary to qualify for application to the fifth-year teacher education program. The B.A. or B.S. in political science prepares students pursuing careers in political science, public administration, international organizations, domestic government, communications, or law. Students who choose the B.A. or B.S. in community development will be empowered to take leadership roles in public affairs.

Graduate students can select from among a wide variety of degrees. The M.S. in criminology and criminal justice permits students to understand the complex interactions among functional parts of the adult criminal justice system. The graduate certificate in gerontology enables students to develop an understanding of the needs and problems of the elderly in urban areas. The Graduate Certificate in Real Estate Development will build the technical and analytical knowledge of those who wish to enter the industry or further develop the skills of industry professionals. The Graduate Certificate in Gerontology provides multidisciplinary training for postbaccalaureate students interested in a variety of settings. The M.A./M.S. in health studies is designed to prepare students for professional careers in education or research in fields of health promotion and disease prevention, and wellness. The Master of Public Administration (M.P.A.) is designed for persons aspiring to positions of management in government and related areas. The Master of Public Health degree (M.P.H.) prepares practitioners and researchers to identify and meet the health needs of defined populations. This degree is offered through the Oregon Master of Public Health Program, a unique collaborative statewide degree program offered through Oregon Health & Science University, Oregon State University, and Portland State University. The M.A./M.S. in political science is designed to prepare students for Ph.D. work in political science or public administration and policy, to pursue graduate-level work in law, or to enter public and private sector jobs requiring advanced knowledge of the political process. The Master of Urban and Regional Planning (M.U.R.P.) permits students to develop professional planning skills, and the Master of Urban Studies (M.U.S.) permits development of urban research capabilities. The Ph.D. program in urban studies prepares students for academic employment and research. The Ph.D. in public administration and policy prepares students for careers in public affairs and administration, including college-level teaching.



School of Community Health

450 Urban Center
503-725-4401
www.healthed.pdx.edu

**B.A., B.S.—Health Studies
Minor in Community Health**
M.A., M.S.—Health Studies
**M.P.H.—Participating school in Master of
Public Health**
Graduate Certificate in Gerontology

The mission of the Portland State University School of Community Health is to promote the public's health and well-being through multidisciplinary education, research, and service. The school builds on the resources of the urban university by integrating individual, population, and systems perspectives respecting cultural diversity, social justice, and global connectedness. We work in collaboration with students, faculty, alumni, and community organizations.

Interest in health education/health promotion has opened new opportunities for health educators in community, business and industry, school, and medical care setting. The School of Community Health offers programs leading to degrees at both the undergraduate and graduate levels. Both levels provide training for professional careers in health education, health promotion, and health-related fields. The baccalaureate degrees provide the necessary background for advanced studies leading to graduate degrees in health-related fields such as medicine, physical therapy, dentistry, and nursing. The school also offers a minor in community health. A variety of health related courses are open to all students in the University.

Undergraduate programs

The undergraduate health studies curriculum is designed around a common core of courses and four separate tracks: school health, community health education, physical activity/exercise, and health sciences.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

A grade of C- or better is mandatory in all coursework required for degrees in the School of Community Health. With the exception of internship credits, courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling the majors or minors offered within the school. Students must fulfill all general University requirements in addition to specific school requirements. Majors and minors may not take required courses under the pass/no pass option.

Core requirements. In addition to meeting the general University degree requirements all majors in health studies must take the following core coursework plus choose a concentration area:

Core coursework	Credits
Stat 244 Introduction to Probability and Statistics	4
PHE 250 Our Community, Our Health	4
PHE 295 Health Promotion and Disease Prevention	4
PHE 350 Health and Health Systems	4
PHE 443 Environmental Health.....	4
PHE 450 Epidemiology.....	4
PHE 404 Internship.....	8
Total	32

Requirements for major with community health education concentration. The community health education concentration prepares students for a wide variety of careers related to health education. It also provides a foundation for the pursuit of graduate study.

In addition to the previously listed common core requirements, students pursuing a concentration in community health education must complete PHE 448, PHE 471, and 36 credits from the list of courses that follows:

Core coursework	Credits
Core coursework	32
PHE 448 Health Education Techniques and Strategies.....	4
PHE 471 Program Planning/Evaluation in Health Education.....	4
Thirty-six credits from the following courses:	36
PHE 275 Stress Management (4)	
PHE 326 Drug Education (4)	
PHE 335 Human Sexuality (4)	
PHE 355 Consumer Health Issues (4)	
PHE 361 Care and Prevention of Injuries (4)	
PHE 363 Communicable Disease and Chronic Health Problems (4)	
PHE 365 Health Promotion Programs for Children and Youth (4)	
PHE 410/510 Selected Topics (4)	

PHE 425/525 Nutrition for Health (4)
PHE 444 Global Health (4)
PHE 445/545 Men's Health (4)
PHE 446 Community Health Principles and Practices (4)
PHE 451/551 Women and Holistic Health (4)
PHE 452 Gender, Race, Class, and Health (4)
PHE 453/553 Reproductive Health of Women (4)
PHE 454 Social Gerontology (4)
PHE 455 Film and Health (4)
PHE 456/556 Health Aspects of Aging (4)
PHE 466/566 Mindbody Health: Disease Prevention (4)
PHE 467/567 Mindbody Health: Human Potential (4)
PHE 480 Controversial Issues in Health (4)

Requirements for major with school health concentration. The school health concentration is designed for students interested in teaching health education within a public or private school setting. Upon completion of a bachelor's degree, students are eligible to apply to the fifth-year Graduate Teacher Education Program (GTEP) in the Graduate School of Education at PSU. After completion of GTEP, students will be certified to teach in the state of Oregon.

In addition to the previously listed common core requirements, students pursuing a concentration in school health education must complete the following:

Core coursework	Credits
Core coursework	32
PHE 275 Stress Management	4
Psy 311 Human Development	4
PHE 326 Drug Education	4
PHE 335 Human Sexuality	4
PHE 355 Consumer Health Issues.....	4
PHE 363 Communicable Disease and Chronic Health Problems	4
PHE 365 Health Promotion Children/Youth	4
Ed 420 Introduction to Education	4
PHE 425/525 Nutrition for Health.....	4
PHE 448 Health Education Techniques and Strategies.....	4
PHE 466 Mindbody Health: Disease Prevention or PHE 467 Mindbody Health: Human Potential	4
PHE 471 Program Planning/Evaluation in Health Education	4

It is required that students who intend to apply to the GTEP program complete an anatomy/physiology sequence.

Requirements for major with physical activity/exercise concentration. The physical activity/exercise concentration is designed for students with interests in physiological and programmatic aspects of exercise, nutrition, fitness, and physical activity. Coursework in practical and applied techniques follows a basic framework in the biological sciences and pre-

pare students for internship experiences related to health promotion.

In addition to the previously listed common core requirements, students pursuing a concentration in physical activity/exercise must complete the following:

	Credits
Core coursework.....	32
Bi 301 Human Anatomy and Physiology.....	4
Bi 302 Human Anatomy and Physiology.....	4
Bi 303 Human Anatomy and Physiology.....	4
PHE 370 Applied Kinesiology.....	4
PHE 425/525 Nutrition for Health.....	4
PHE 448 Health Education Techniques and Strategies <i>OR</i> PHE 471 Program Planning/Evaluation in Health Education.....	4
PHE 456/556 Health Aspects of Aging.....	4
PHE 473/573 Physiology of Exercise.....	4
PHE 474 Exercise Prescription and Training.....	4
PHE 475/575 Exercise Testing Techniques.....	4
Upper-division credits in the School of Community Health.....	16

Requirements for major with health sciences concentration. The health sciences concentration provides students seeking admittance into professional programs such as medicine, dentistry, physical therapy, and occupational therapy the opportunity to earn an undergraduate degree in health studies while completing preprofessional prerequisites.

In addition to the previously listed common core requirements, students pursuing a concentration in health sciences must select one of the following options: pre-medicine, pre-dentistry, pre-physical therapy, pre-occupational therapy, prechiropractic medicine, pre-osteopathy, pre-podiatry, pre-nursing, pre-naturopathic medicine, pre-optometry, pre-pharmacy, and pre-physician assistant. In choosing courses to complete, students should verify the specific prerequisites required by the professional school(s) to which an application for admission is being submitted. Advising sheets summarizing prerequisites for professional schools in Oregon and selected schools in the Pacific Northwest are provided in the School of Community Health Undergraduate Advising Center (450C URBN), as well as the College of Liberal Arts and Sciences. Students must complete all prerequisites required by the professional school to which an application is being submitted to receive a Health Science degree. Because admission is limited and highly competitive, students are encouraged to take additional recommended coursework. Please consult regularly with your pre-health adviser.

In addition to the previously listed community core requirements, students must complete 16 credits from the following upper-division courses:

16 credits from the following upper-division courses:.....	16
PHE 355 Consumer Health Issues (4)	
PHE 361 Care and Prevention of Injuries (4)	

PHE 363 Communicable Disease and Chronic Health Problems (4)	
PHE 365 Health Promotion Programs for Children and Youth (4)	
PHE 370 Applied Kinesiology (4)	
PHE 410/510 Selected Topics (4)	
PHE 414/514 Physical Activity Today (4)	
PHE 425/525 Nutrition for Health (4)	
PHE 444 Global Health (4)	
PHE 445/545 Men's Health (4)	
PHE 446 Community Health Principals and Practices (4)	
PHE 451/551 Women and Holistic Health (4)	
PHE 452 Gender, Race, Class, and Health (4)	
PHE 453/553 Women's Reproductive Health (4)	
PHE 454 Social Gerontology (4)	
PHE 455 Film and Health (4)	
PHE 456/556 Health Aspects of Aging (4)	
PHE 466/566 Mindbody Health: Disease Prevention (4)	
PHE 467/567 Mindbody Health: Human Potential (4)	
PHE 473/573 Physiology of Exercise (4)	
PHE 474 Exercise Prescription and Training (4)	
PHE 475/575 Exercise Testing Techniques (4)	

Requirements for minor. The minor in community health consists of coursework selected from the list of core coursework and provides students with a foundation of theory and content related to community health.

To earn a minor in community health, students must complete at least 28 credits. At least 16 credits must be taken in residence at PSU, and 16 credits must be upper-division. The requirement for the minor includes:

	Credits
PHE 250 Our Community, Our Health.....	4
PHE 295 Health Promotion Disease Prevention.....	4
PHE 350 Health and Health Systems.....	4
PHE 443 Environmental Health.....	4
PHE 450 Epidemiology.....	4
Upper-division credits in SCH.....	8
Total	28

SECONDARY EDUCATION PROGRAM

Students who wish to become licensed teachers in health education must complete a required list of courses or their equivalent before applying to the Graduate School of Education for admission into the Graduate Teacher Education Program (see requirements page 225). These courses are required whether the applicant holds a degree in the field or holds a degree in another subject field. Courses in the School of Community Health can be taken to complete the Oregon Continuing Teaching License in Health, and selected courses can be taken to complete the Oregon Continuing Teaching License in Physical Education.

All courses taken for the teaching field requirement must be passed with a C- or better grade and must average a 3.00 GPA. Prospective teachers should contact the School of Community Health for specific requirements.

Graduate programs

The School of Community Health graduate programs are designed to prepare students for professional work in the fields of community health, health education, and health promotion in a wide variety of settings. Students may also complete a plan of study that prepares them to pursue a doctoral degree in a health-related area.

The School of Community Health offers two graduate degrees: (1) a Master of Public Health (M.P.H.) degree in health promotion as a partner in the Oregon Master of Public Health Program, a statewide collaborative of Oregon Health & Science University, Oregon State University, and Portland State University, and (2) a Master of Arts/Master of Science (M.A./M.S.) degree in health studies. In addition, the Institute on Aging offers a graduate certificate in gerontology. Students with a wide variety of undergraduate degrees and professional experience are admitted to the School of Community Health.

Admission requirements

To apply for admission to the graduate degree program, students are required to:

- ◆ Have a cumulative undergraduate GPA of 3.00 or higher.
- ◆ Complete the Graduate Record Examination, TOEFL scores if applicable.
- ◆ Provide three letters of recommendation from individuals qualified to assess the applicant's potential as a graduate student.
- ◆ Submit a 500-word essay describing the applicant's professional goals as they relate to the graduate program in community health.

In addition to providing academic transcripts, a resume of professional work-related experience (if any) should be submitted. The application deadline for fall admission is February 1 of each year.

Degree requirements

Master of Public Health. Students pursuing the M.P.H. degree must complete at least 59 credits with a cumulative GPA of 3.00 or higher, including a core of 16 credits, 25 additional required credits (including an internship), 15 credits in a specialty area, and 3 credits of electives. Specialty areas include advocacy and social change; aging; health behavior; integrative health; physical activity and risk reduction; and women's health. The

student's academic adviser must approve all program electives. All students must complete an internship and successfully pass a comprehensive examination.

Master of Arts/Master of Science in health studies. Students pursuing the M.A./M.S. degree must complete at least 47 graduate credits with a cumulative GPA of 3.00 or higher, including a core of 29 credits, and 18 additional credits from one of two concentrations: mindbody health or physical activity/exercise. All M.A./M.S. students must complete a thesis and an oral defense of the thesis.

A complete description of the required and elective courses available to graduate students in the School of Community Health is available on the school's Web site at <http://www.healthed.pdx.edu/>.

GRADUATE CERTIFICATE IN GERONTOLOGY

The graduate certificate in gerontology provides multidisciplinary specialized training for postbaccalaureate students interested in acquiring or upgrading skills appropriate to working with elders in a variety of settings. Students need not be enrolled in a degree program to receive the graduate certificate in gerontology.

The certificate program consists of a six-course format (18 credits minimum) made up of a three-course multidisciplinary core, two elective courses, and an internship or independent research project. The coursework will provide students with a general multidisciplinary introduction to the field of aging, while the internship or independent project will allow a student to acquire experiential learning in a community-based aging service organization.

Courses

Community Health

Courses with an asterisk () are not offered every year.*

*PHE 199 Special Studies (1-3)

PHE 250

Our Community: Our Health (4)

Examines social, behavioral, and environmental community health-related issues and the controversies that surround them. This course will be a recommended prerequisite for all upper-division classes in the major.

PHE 252

First Aid (4)

Emergency care for various types of injuries: assessment, life threatening injuries, medical emergencies, and special situations. Additional training for childbirth and CPR for adult, infant, and child. Course leads to Red Cross certification.

PHE 275

Stress Management (4)

An overview of the physiology of stress, stress triggers, assessment of stress, and stress management techniques and strategies.

PHE 295

Health Promotion/Disease Prevention (4)

Examines scientific literature regarding lifestyle choices that promote optimal health and functioning. Behaviors regarding self-protection, self-care, and health promotion are compared to recommendations emerging from this literature.

PHE 326

Drug Education (4)

Examines various approaches to drug education with an emphasis on prevention models. Epidemiology of and trends in drug use in the U.S. and effects on society. Reviews current and controversial issues and legal information on drug use effects. Recommended prerequisite: PHE 250.

PHE 335

Human Sexuality (4)

A survey of the psychological, physiological, and behavioral aspects of human sexuality, with particular emphasis on the influence of popular culture on these dimensions.

PHE 350

Health and Health Systems (4)

An overview of the organization, financing, and delivery of health services in the United States, with particular emphasis on analysis from professional, organizational, community, and systems perspectives.

PHE 355

Consumer Health Issues (4)

Identifies and critically analyzes issues related to the production, marketing, and consumption of health-related goods and services. Media messages about consumer health issues are examined; topical and timely research is analyzed. Recommended prerequisite: PHE 250.

PHE 361

Care and Prevention of Injuries (4)

Introduction to the prevention, recognition, care, and rehabilitation of injuries resulting from participation in activity. Practical skills are demonstrated and practiced with emphasis on student participation. Recommended prerequisites: Bi 301, 302.

PHE 363

Communicable Diseases and Chronic Health Problems (4)

Reviews etiology, epidemiology, and approaches to prevention of infectious and chronic diseases. Aspects of risk factors, transmission, pathogenesis, immunology, case management, and control programs are discussed. Basic human physiological processes are reviewed. Recommended prerequisites: Bi 301, 302, PHE 250.

PHE 365

Health Promotion Programs for Children and Youth (4)

Provides an understanding of factors that influence health status and development of children and youth in the United States. Particular attention will be directed at health promotion programs for children, youth, and families in school and community settings. Includes a service component.

PHE 370

Applied Kinesiology (4)

Overview of anatomical and mechanical bases of human movement. Review of biomechanical principles with applications to exercise and health. Recommended prerequisite: Bi 301.

PHE 401/501

Research (Credit to be arranged.)

Consent of instructor.

PHE 402/502

Independent Study (Credit to be arranged.)

PHE 404

Cooperative Education/Internship (Credit to be arranged.)

A work related experience designed to connect and integrate theory with specific activities in a "real" environment under supervision. Field hours for students taking the internship will be 30 hours per credit per term. Additionally, students will be expected to attend scheduled seminars.

PHE 405/505

Reading and Conference (Credit to be arranged.)

Consent of instructor.

PHE 406/506

Special Projects (Credit to be arranged.)

PHE 407/507

Seminar (Credit to be arranged.)

Maximum: 9 credits.

PHE 408/508

Workshop (Credit to be arranged.)

PHE 409/509

Practicum (Credit to be arranged.)

PHE 410/510

Selected Topics (Credit to be arranged.)

PHE 414/514

Physical Activity Today (4)

Overview of topics relevant to the study of physical activity in the United States. Topics: review of physiological alterations related to physical activity; historical background of physical activity recommendations; measurement issues; community-based approaches to increasing physical activity; school-based physical activity programs; older adults and special populations; work site and health care settings. Recommended prerequisite: PHE 250/295.

PHE 425/525

Nutrition for Health (4)

Examines basis for and quality of current nutritional requirements, standards, and guidelines. Studies evidence regarding current food fads and controversies. Analyzes personal dietary practices. Recommended prerequisites: PHE 250 and six hours of upper-division coursework in PHE.

PHE 443

Environmental Health (4)

Designed to enable the student to understand and evaluate complex environmental health issues induced by waste products generated by modern technology. Specific topics include water quality, air quality, solid and hazardous waste, occupational health, ionizing and non-ionizing radiation, chemical contamination of foods, food additives, animal transmission of disease, noise, and selected current topics. Recommended prerequisites: PHE 250 and six hours of upper-division coursework in PHE.

**PHE 444
Global Health (4)**

Critically explores global public health issues as they pertain to different populations throughout the world, such as global disease eradication initiatives, environmental and infectious diseases from an international perspective, and discusses health needs of special populations. Recommended prerequisite: upper-division standing.

**PHE 445/545
Men's Health (4)**

The focus of this course is current men's health issues. Students have opportunities to critically explore a broad array of men's health concerns across the life span from a multidisciplinary perspective. Men's health issues may include such topics as reproductive health, violence, aging, heart disease, depression, and sexuality. The class is taught in an interactive format through group discussion, presentations, and the participation of group speakers. The course focuses on the consideration and critique of current influences on men's health including the effect of the health care system, male socialization, the impact of the social and cultural factors, and the influence of evolving technology.

**PHE 446
Community Health Principles
and Practices (4)**

Provides an overview of the scope of problems in the field of community health. Examines disease prevention/control, community health service delivery, the structure of official/unofficial agencies, and policy/decision-making processes. Course includes field work in a community health agency. Recommended prerequisite: PHE 350.

**PHE 448
Health Education Techniques
and Strategies (4)**

Introduces students to basic techniques and strategies used in planning and carrying out health education programs in a variety of settings. Special emphasis is given to scope and sequencing skills, objective writing, selection/development of health education resources/materials, and methods for and use of technology in the delivery of health education programs. Recommended prerequisite: PHE 350.

**PHE 450
Epidemiology (4)**

Introduces principles and methods of epidemiological investigation of infectious/non-infectious diseases. Illustrates methods by which properly conducted studies of the distribution and dynamic behavior of disease in a population can contribute to understanding of etiologic factors, modes of transmission, and pathogenesis of disease. Recommended prerequisite: PHE 363.

**PHE 451/551
Women and Holistic Health (4)**

Exploring the intersection of three fields—allopathic medicine, women's health, and complementary therapies—the course examines the emerging field of integrative medicine, highlighting the contributions that women care givers and healers have made to its development. An overview of common women's health concerns provides the opportunity to compare

and contrast essential elements of holistic treatment approaches with those of allopathic medicine. Recommended prerequisite: PHE 295 or WS 101.

**PHE 452
Gender, Race, Class and Health (4)**

Emphasizes how the gender-, race-, and class-based organization of society affects the health of our communities. Covers an introduction and historical framework for social inequities in health; describes disparities in health by gender, race, and class; and explores the interplay between these major social forces and the biological mechanisms that influence the occurrence of disease. Recommended prerequisite: upper-division standing, consent of instructor.

**PHE 453/553
Women's Reproductive Health (4)**

Critical review of current public health and socio-political issues in women's reproductive health. Both national and international topics are discussed. Students apply health knowledge in identifying and seeking solutions to the issues which concern health care providers, consumers, and policy makers. Recommended prerequisites: PHE 250 and 335.

**PHE 454
Social Gerontology (4)**

Addresses the social and ethical issues, problems, policies, and programs that affect the quality of life for our rapidly aging population. The interdisciplinary field of gerontology offers students the opportunity to integrate biological, psychological, and social theories of aging. Also examines the economic and political impacts of an aging society. Recommended prerequisite: upper-division standing.

**PHE 455 (4)
Film and Health**

Critically explores public health issues as they are portrayed in popular films and discusses the scientific, social, and political underpinnings of the public health issues portrayed in these movies. Covers diseases such as AIDS, hemorrhagic fever, MS, cancer, leukemia, and multiple chemical sensitivity from both biomedical and social perspectives. Guest speakers from the community will contribute to the discussion. Recommended prerequisite: upper-division standing.

**PHE 456/556
Health Aspects of Aging (4)**

Examination of health-related changes that occur with aging. Review of current scientific literature with an investigation of physiological mechanisms responsible for changes in functional capacity throughout life. Explores the role of physical activity and nutrition in healthy aging. Recommended prerequisites: PHE 295 or 250, and Bi 302.

**PHE 466/566
Mind/Body Health: Disease Prevention (4)**

An investigation of the integral relationship between body and mind and how that relationship manifests itself in health, illness, and promotes healing. Philosophical and scientific foundations of mind/body health are explored. Mind/body research and its application within allopathic medicine is examined as is research and practice in complementary fields of medicine and health care. Recommended prerequisites: Psy 204, PHE 363.

**PHE 467/567
Mind/Body Health: Human Potential (4)**

Theory and research in the human potential movement is integrated with research in mind/body medicine to produce an expanded understanding of human transformative capacities. Transformative practices including meditation, yoga, imagery, biofeedback, and sport are examined. Elements common to all transformative practices are identified. Recommended prerequisite: PHE 466/566.

**PHE 471
Program Planning and Evaluation in
Health Education: Theory and Skill
Development (4)**

Examines program planning models for health education. Includes needs assessment; program goals and objectives; program content and methodologies, evaluation, budgeting, and proposal writing. Students will gain practical experience in program planning and evaluation through community-based learning. Field work required. Recommended prerequisite: twelve hours of upper-division coursework in PHE.

**PHE 473/573
Physiology of Exercise (4)**

Examination of physiological responses and adaptations to exercise, with a focus on the interaction of metabolic, endocrine, neuromuscular, cardiorespiratory, and environmental factors related to fitness and health. Recommended prerequisites: Bi 301, 302.

**PHE 474
Exercise Prescription and Training (4)**

Focuses on the basic principles and skills needed for developing and implementing physical fitness programs. Emphasis includes: appropriate/safe training procedures and the underlying principles which support such methods, applications to younger and older populations, gender differences, motivational strategies and health behavior theory, and exercise leadership skills. A significant portion of the course involves experiential learning. Recommended prerequisites: PHE 295, 473.

**PHE 475/575
Exercise Testing Techniques (4)**

Theory and application of assessment methods/tools used to evaluate physiological function relating to fitness and health, including laboratory and field tests. Significant emphasis on developing skills necessary for conducting tests on apparently healthy individuals. Assessment categories include anaerobic performance, muscular strength and endurance, flexibility, body composition, cardiovascular function. Recommended prerequisites: Mth 111, PHE 473.

**PHE 480
Controversial Issues
in Community Health (4)**

Examines controversial issues in the field of community health (e.g., violence, women's health, medical technology, access to health services). Group presentations required. Recommended prerequisites: senior status and 12 credits of PHE.

**PHE 503
Thesis (Credit to be arranged.)****PHE 504
Cooperative Education/Internship (Credit
to be arranged.)**

**PHE 511
Foundations of Public Health (3)**

Provides students with an understanding of the field of public health. It provides knowledge about public health principles, concepts, values, tools, and applications. Key topics in the class include the mission of public health, the politics of public health, determinants of health in the United States, major models and strategies for health promotion, and community perspectives on public health interventions.

**PHE 512
Principles of Health Behavior I (3)**

Presents an overview of the biological, psychological, behavioral, sociocultural, and environmental factors that function in the promotion of health and prevention of disease. Theories developed to explain health and illness behaviors at intrapersonal, interpersonal, and group/community levels are introduced. Ethical issues involved in health-related behavior change are examined. Satisfies the core M.P.H. requirement. Recommended prerequisite: graduate standing.

**PHE 513
Health, Behavior
and the Social Environment (3)**

Surveys the social science research and theory concerning the social, economic, and cultural influences on health-related behavioral risk factors. Attention will be given to the divisions within society that affect the disease process, including the etiology and consequences of a wide range of adverse health outcomes. The central focus of each unit of study will be on the implications of a socio-ecology of health for community health practice and public health policy. Recommended prerequisite: PHE 512.

**PHE 517
Community Organizing (3)**

Emphasizes the role of community organizing to engage diverse communities to advance the conditions in which people can be healthy. It further examines the role of health educators, grassroots activists, and others in stimulating social, political, and economic approaches to promote community health. Also addresses the advancement of theoretical knowledge and practical skills of community organizing.

**PHE 518
Topics in Health Studies (3)**

In-depth analysis of recent research and related program developments on one or more health-related topics. Topics vary according to term and instructor. Course may be taken more than once on different topics. Topics may include: mind/body health, nutrition, international health, environmental health, physical activity/exercise, and health of special populations. Recommended prerequisite: graduate standing.

**PHE 520
Qualitative Research Design (3)**

Presents the philosophical and theoretical bases supporting the development of alternate research paradigms in human inquiry. Essential characteristics of three major alternate paradigms (interpretivist, constructivist, and critical theory) are introduced. Validity, reliability, and related concepts are examined from the perspective of each paradigm. Alternate strategies for inquiry are presented and ethical considerations related to qualitative forms of inquiry are

addressed. Recommended prerequisite: graduate standing.

**PHE 521
Quantitative Research
Design and Analysis (3)**

Introduction to quantitative research design and statistical analysis. Emphasis on development of a research proposal. Topics include descriptive research, experimental and quasi-experimental research, univariate statistical procedures, and methods for planning and writing a research report. Recommended prerequisite: Stat 244.

**PHE 531
Women and Exercise:
Physiological Aspects (3)**

Overview of physiological and health-related effects of exercise on women. Emphasis on the responses and adaptations to exercise specific to women. Topics include gender differences, the menstrual cycle, pregnancy, menopause, and osteoporosis. Recommended prerequisite: PHE 473/573.

**PHE 535
Epidemiology Survey (3)**

Designed as an introduction to epidemiology for students in the Oregon Master of Public Health program. Epidemiology is the science of public health that is concerned with the distribution of disease in populations and risk factors that influence health outcomes. Students will learn epidemiologic methods to identify and solve public health problems. The course will cover measures of disease occurrence, screening for disease, study design, association and causation, biases and confounding as well as genetic epidemiology. An emphasis is placed upon critical reading of the epidemiologic literature and to addressing a public health problem with epidemiologic methods.

**PHE 540
Mass Communication and Health (4)**

Examine the use and effectiveness of mass media to both report the news about health and to promote changes of action in health-related areas. Students will be required to critique media health messages regarding their objectivity and the extent to which they are comprehensive.

**PHE 541
Media Advocacy and Public Health (3)**

Provides students with an understanding of the role of media advocacy in advancing public health policies to promote health. The course uses lectures, group exercises, and case studies to illustrate basic concepts and skills related to media advocacy. Topics covered include: gaining access to the news, framing issues from a public health perspective, and the use of paid advertising to advance policy. Content areas include tobacco, violence, handguns, suicide, alcohol, and other public health issues.

**PHE 543
Drugs, Behavior, and Society (3)**

Emphasis will be placed on the relationship between drug and alcohol use and a broad range of social circumstances associated with socio-economic status, race/ethnicity, and gender. Particular attention will be given to policy and service issues regarding the treatment and prevention of alcohol and drug abuse from a public health perspective. Recommended prerequisite: graduate standing.

**PHE 546
Urban and Community Health (3)**

Examines the social factors associated with urban health and quality of life, such as social class, gender inequalities, and racism. Emphasis will be placed upon community development and collective responses to the maintenance of health rather than upon individualized health promotion and disease prevention strategies.

**PHE 550
Health Promotion Program Planning (4)**

Addresses practical applications of health promotion theories. Presents examples of planning, implementation, and evaluation of health promotion programs in a variety of settings as guides for the development of health promotion programs.

**PHE 552
Women's Health (3)**

Focuses on constructions of gender and sex and their implications for understanding determinants of population health, developing health promotion programs, and creating healthy public policy. Emphasizes the importance of the social, political, and economic context for women's health. Topics include epidemiology of women's health; diversity and health issues; reproductive health and sexuality; health care and access to health services; violence; mental health and emotional well-being; aging; lesbian health; and research in women's health. Course learning will be synthesized through a community-based learning experience involving working with a community organization to evaluate women's health needs in Portland.

**PHE 557/657
National Long-term Care Policy (3)**

This course examines the need for long-term care services and the risk factors associated with utilization of them as well as familiarizing students with the financing and delivery mechanisms in long-term care, both public and private. The policy issues in current long-term care initiatives are explored.

**PHE 558/658
Perspectives on Aging (3)**

An introduction to the field of gerontology is presented from the perspectives offered by multiple disciplines, including sociology, psychology, biology, economics, political science, and demography. Stereotypes of aging and theoretical frameworks for understanding aging are examined, as are normal age-related changes, the impact of social, political, and economic conditions on the process of aging, and the myriad consequences of a growing population of elders.

**PHE 559/659
Economics of Aging (3)**

Objectives are (1) understand the roots of income inequality between the aged and non-aged; (2) review the economic and policy factors that influence the decision to retire; (3) understand the political economy of old age income support in the U.S. and abroad; (4) explore the history, operation, and policy questions of our major public pension system, social security; and (5) discuss private pensions in relationship to U.S. income maintenance policy.

**PHE 560/660
Mental Health and Aging (3)**

Focus on a psychological approach to mental health and aging. The physical and social environments of older people, as well as the individual's physical and psychological condition, strongly affect the mental health and quality of life of older people. It is the goal of the course to be useful to people who work with older adults and their families, or to people who want to understand the changes that may be happening for older members of their own families. Guest speakers from the field of geriatric mental health will supplement the readings and course assignments.

**PHE 561/661
Cultural Variations in Aging (3)**

The aging population includes an increasing percentage of people from a variety of ethnic groups. Although there may be cultural similarities between these groups and the dominant culture, there are also important differences, particularly in the role of the family in decision-making, attitudes and beliefs about illness, dying, and death. Students learn about cultural differences and similarities through observing programs that serve ethnic elders, talking with guest speakers who represent different ethnic communities, and reading several texts related to counseling, healthcare, and understanding grief, death, and dying in a variety of ethnic groups.

**PHE 576
Physical Activity, Health, and Disease (3)**

Review of current research to explore the relationships between physical activity/exercise and health/disease. Primarily investigates the role of physical activity in disease prevention, but also examines the impact of a variety of physical conditions (e.g., obesity, aging, etc.) on the potential for an active lifestyle. Topics include cardiovascular diseases, musculoskeletal disorders, respiratory conditions, metabolic diseases, cancers, and mental health. Recommended prerequisite: PHE 473.

**PHE 577
Exercise, Nutrition, and Performance (3)**

Review of metabolic processes and physiological mechanisms involved in nutrient utilization in humans. Examination of the relationships between nutrition and health, with an emphasis on analysis of current research. Topics include carbohydrates, fats, protein, vitamins/minerals, fluids, weight control, and ergogenic aids. Analysis of nutritional modifications presumably related to exercise, health, and performance. Recommended prerequisites: PHE 473.

**PHE 580
Concepts of Environmental Health (3)**

An intensive course designed to familiarize students with fundamentals of environmental health from a scientific and conceptual perspective. Topics are considered within multi-causal, ecological, adaptive systems, and risk-assessment frameworks. Includes consideration of biological, chemical, and physical agents in the environment which influence public health and well-being. Recommended prerequisite: graduate standing.

**PHE 601
Research (Credit to be arranged.)****PHE 605
Reading and Conference (Credit to be arranged.)****Physical Education****†PE 185****Physical Education: Co-ed (1)**

A variety of activities taught for physiological and recreational values.

†PE 280**Physical Education Service Courses:
Women (2)**

A variety of activities taught for physiological and recreational values. Two hours per week plus field trips and extended experiences.

†PE 285**Physical Education Service Courses:
Co-ed (2)**

A variety of activities taught for physiological and recreational values. Two hours per week plus field trips and extended experiences.

**Research centers
and institutes****Center for Public
Health Studies**

450 Urban Center

503-725-4401

www.cphs.pdx.edu

The Center for Public Health Studies (CPHS), based in the School of Community Health, seeks to enhance the public's health by conducting interdisciplinary research exploring the interaction among health, society, and social policy. Our mission is to examine the structural causes and consequences of health and disease, to examine health behaviors in their social context, study the effects of culture and the environment on health and attitudes toward health care, and analyze the political processes and social policies that affect the health status of populations. Our goal is to blend theoretical and practical perspectives in an effort to improve the public's health.

The CPHS has embarked on an exciting and ambitious research agenda spanning diverse interests such as access to health care among families leaving welfare, violence prevention, the role of the news media in framing public health issues, breast and kidney cancer, mental and physical well-being among the aged, and the importance of physical activity. The roles of social inequality, social networks, social capital, and social policy on health are areas of emerging emphasis.

The center is a vehicle for scholarship that brings together many departments and programs on campus. There is also collaboration with a rich mixture of community and statewide organizations. Undergraduate and graduate students can

gain valuable experience in public health research and dissemination through the center's many activities.

Institute on Aging

470 Urban Center
503-725-3952

Established in 1969, the Institute on Aging is a multidisciplinary research and training center located within the School of Community Health in the College of Urban and Public Affairs. The institute has three primary functions:

- ◆ To design, carry out, and facilitate research related to the issues, policies, and programs that affect the quality of life for elders and their families
- ◆ To develop and implement training for persons interested in gerontology, geriatrics, and lifelong learning
- ◆ To provide service to the community in the form of short-term training, educational programming, technical assistance, and the sponsorship of organizations for elders.

Research. The faculty of the institute is composed of a multidisciplinary group of nationally and internationally recognized scholars. Substantive and theoretical perspectives are represented from such social science disciplines as psychology, sociology, political science, urban studies, economics, social work, speech communication, and public administration. Recent research projects have attracted federal, state, and private funding and have focused on family caregiving, health behaviors, social relationships, long-term care, housing, fitness and exercise, aging and health services delivery and policy, business and aging, and research methods.

Education and training. The IOA offers courses in gerontology for undergraduate, master's and doctoral students, as well as research and teaching opportunities for students in the college's doctoral programs in urban studies and in public administration and policy. The IOA coordinates the Graduate Certificate in Gerontology program. This post-baccalaureate program provides a multidisciplinary core curriculum and is designed for students seeking specialized career training in aging.

The IOA is a member of the Oregon Geriatric Education Center (OGEC), a partnership among the Portland Veterans Affairs Medical Center, Oregon Health & Science University, and Oregon State University's gerontology program. The OGEC is committed to improving health care services for older Oregonians through education for health care professionals,

†Not more than 12 credits in any combination of numbers may be applied to the 180-credit requirement. Additional fees will be charged for these courses.

educators, and students. The IOA houses the OGECC Resource Center, a membership-driven lending library of instructional materials related to geriatrics and gerontology.

Service. IOA faculty and staff are actively engaged in the community providing consultation and technical assistance to a wide variety of aging-related organizations. The IOA is an organizational member of the Oregon Gerontological Association.

The IOA houses and sponsors the Senior Adult Learning Center (SALC), which exists to enhance the quality of life of older people through the provision of opportunities for intellectual enrichment, leadership, fellowship, and personal growth within the University setting. The SALC coordinates the University's program for senior citizens (aged 65 or older), who may attend on-campus classes on a space-available basis at no charge other than that

for special materials, if any. The SALC also coordinates the Retired Associates of Portland State University, a membership organization open to anyone who is aged 50 or older and is interested in lifelong learning and fellowship.

Further information, including criteria for admission to the Graduate Certificate in Gerontology Program, is available through the IOA's main office, 470 Urban Center, or at www.ioa.pdx.edu.

Mark O. Hatfield School of Government

Ronald L. Tammen, Director
650 Urban Center
503-725-5156
www.hatfield.pdx.edu

The Mark O. Hatfield School of Government is one of three schools within the College of Urban and Public Affairs. It consists of three academic divisions and six institutes: Division of Criminology and Criminal Justice; Division of Political Science; Division of Public Administration; Criminal Justice Policy Research Institute; Executive Leadership Institute; Institute for Nonprofit Management; the National Policy Consensus Center; the Institute for Tribal Administration; and the Northwest American-Turkish Research Institute. The public administration and policy Ph.D. program is also housed in the School of Government.

Graduate programs

Doctor of Philosophy in public administration and policy. The Ph.D. in public administration and policy is an interdisciplinary program designed to prepare individuals to pursue research, teaching, and/or consulting in a variety of settings ranging from private universities to policy research organizations, public agencies, and private consulting firms. The degree may be pursued on a full- or part-time basis.

The degree program is administered through the Hatfield School of Government, but draws on faculty from the entire College of Urban and Public Affairs. Faculty members are drawn from public administration, political science, economics, policy sciences, and urban studies.

The curriculum focus is governance, the integrated study of administrative and policy processes in the public sector. This curriculum is taught against the backdrop of globalizing economies and political systems seeking to recognize governance in a modern world characterized by both cooperation and conflict among the public, private, and non-profit organizations.

Finally, the doctoral program in public administration and policy is designed to enable students to approach governance as an applied area of knowledge in which theory informs and is informed by real-world practice.

Admission requirements

Students wanting more information concerning the Ph.D. in public administration and policy may consult the following Web site: <http://www.hatfieldschool.pdx.edu>.

For admission information and materials you may download the application forms from the above Web site, or write, Admissions Officer, Ph.D. Program in Public Administration and Policy, Hatfield School of Government, College of Urban and Public Affairs, Portland State University, PO. Box 751, Portland, OR 97207-0751; email, Johnsonro@pdx.edu or call 503-725-4044.

You will automatically be sent an application packet and relevant information concerning the program.

It is also suggested that you set up a personal telephone interview with the program coordinator, if feasible, to discuss the program and your personal academic plans. You may do this by calling 503-725-3921, 503-725-3920, or by e-mailing elya@pdx.edu.

Degree requirements

Prerequisites. All students entering the doctoral program must have completed a basic course in statistics either upon entering or within the first year of study. No degree credit will be awarded for this coursework.

Credit requirements. The Ph.D. in public administration and policy requires 89-92 credit hours of required and elective coursework. In addition, the student receives 27 credits for work on his or her dissertation.

The credits are distributed as follows:

	Credits
Coursework [†]	18
Field of Specialization (Tracks 1-4)	47-50
Research Methods.....	24
	Subtotal 89-92
Dissertation Credits.....	27
	Total 116-120

To meet these credit requirements, relevant past academic coursework and previous professional experience is recognized in these ways:

- Up to 30 credits of coursework related to public policy, public administration, or research methods completed at the master's level may be counted toward the Ph.D. degree.
- Up to 12 additional credits may be waived from the student's dissertation field based on the individual's related master's-level work or professional experience.
- Students with extensive academic background and/or experience in using quantitative or qualitative research methods may waive one or more required research methods courses with permission of their academic adviser and substitute other coursework.

[†] The core curriculum must be completed during the first year.

Coursework. The core curriculum must be completed during the first year.

Core courses	Credits
PAP 620 Seminar in the American Political Institutions	3
USP 664 Organizational Theory and Behavior	3
PAP 611 Theoretical Foundations of Governance.....	3
PAP 612 Governance, Social Change, and Rule of Law Systems.....	3
PAP 614 Contemporary Governance	3
PAP 656 Advanced Political Economy	3
Subtotal	18

Specialization fields (Tracks 1-3).

Students must choose one of the following three fields as their primary field of study.

In selecting courses to satisfy credit hour requirements of the following fields, the doctoral program committee can recommend classes offered in the three divisions of the Hatfield School of Government, the School of Community Health, the School of Urban Studies and Planning, and other courses from PSU's departments. In addition, credit can be given to graduate courses completed at other universities.

1.a. Public Administration and Policy (24 credit hours). A key goal of this track is to facilitate multidisciplinary training and research for careers in public administration with a special focus on administration of public policy.

- PAP 616/USP 660 Policy Process (3)
- PAP 615 Administrative Process (3)
- USP 661 Policy Analysis: Theoretical Foundations (3)
- PA 534 Administrative Law (3)
- Electives (12)

1.b. Dissertation Field Specialization† (24 credit hours, all electives) Electives determined in agreement with field examining committee.

Subtotal 48

2.a. Politics and Public Policy (25 credit hours). A key goal of this track is to facilitate multidisciplinary training and research for careers in academic and applied fields. Required microeconomics and evaluation/benefit-cost courses provide training in economic analysis. The domestic and international policy courses provide political science perspectives on the policy process.

- PAP 616/USP 660 Policy Process (3)
- USP 661 Policy Analysis: Theoretical Foundations (3)
- PS 558/USP 636 Economic and Political Decision-Making (3)
- USP 615 Economic Analysis of Public Policy (4)
- USP 536 Policy Evaluation Methods (3)
- Electives (9)

2.b. Dissertation Field Specialization† (23 credit hours, 5-7 courses depending on the credit hours of each course, all electives). Electives determined in agreement with field examining committee.

Subtotal 48

3.a. Community Health and Social Change (24 credit hours). The focus of the community health track will be on the social structural factors that influence health. The main themes are socioeconomic factors, culture, politics, and social change.

- USP 654 Data Analysis II (4)
- PHE 620 Qualitative Research Design (3)
- PHE 513/613 Health, Behavior, and the Social Environment (3)
- PHE 517/617 Community Organizing and Social Change (3)
- PAP 616/USP 660 Policy Process (3)
- Electives (8)

3.b. Dissertation Field Specializations† (27 credit hours all electives). Electives determined in agreement with field examining committee.

Students with an M.P.H. degree will be given advance standing. The 15 credit hours that make up the core courses of the M.P.H. will reduce the hours required in the specialization field to 12 hours. Students who enter the program without an M.P.H. will be required to take the M.P.H. core courses:

- PA 574 Health Systems (3)
- PHE 512 Health Behavior (3)
- PHE 535 Epidemiology (3)
- *P.H. 525 Introduction to Biostatistics (4)
- PHE 580 Environmental Health (3)

Subtotal 51

4.a. Criminology and Criminal Justice (23 credit hours). The focus of the criminology and criminal justice track is to provide students with a broad-based understanding of the criminal justice system and society's response to crime. Students will be prepared to pursue careers in academic, research, or community settings.

- AJ 615 Theories of Crime (4)
- AJ 620 Analysis of Crime and Justice Data (4)
- AJ 625 Criminal Justice Theory (4)
- AJ 630 Criminal Justice Research (4)
- AJ 635 Criminal Justice Policy (4)
- PAP 616/USP 660 Policy Process (#)

4.b. Dissertation Field Specializations (24 credit hours, all electives). Electives determined in agreement with field examining committee.

Subtotal 47

Research Methods (24 credits)

- PS593 Philosophy of Social Science (4) or Sociology 591 (4)
- USP 630 Research Design (4)
- USP 634 Data Analysis (4)

Beyond these three core courses, students will be expected to work closely with their committees to develop the methodological competencies necessary for their professional and research goals. It is expected that students will develop familiarity with basic quantitative and qualitative approaches to social scientific research and facility with the specific research tools that will be required for their dissertation work.

Dissertation Research (27 credits)

Total 117-120

Dissertation fields. All students must complete two dissertation fields. One of these combines the two basic elements in governance, public administration and policy. The other is designed to provide background that enables the student to prepare a dissertation. Some courses in the public administration and policy field are required, while others are electives the student chooses with his or her field committee.

***OHSU course.** The student's field committee is composed of faculty members chosen and organized by the student. This committee should be composed of three members: one who can examine the student in public administration, one in policy, and one in the subject matter of the student's dissertation field. Students may draw committee members from the faculty of the College of Urban and Public Affairs and from the University at large. The student's committee also prepares the Part B comprehensive examination (see below).

Individuals should choose the chair of their committee the fall term in which they complete the Part A comprehensive examinations. The remaining two committee

members should be chosen by the beginning of the following spring term.

Comprehensive examinations. In order to evaluate one's ability to integrate, analyze, and critique the diverse materials and ideas presented in the PAP curriculum, students are required to complete a two-part comprehensive examination. Part A of the examination (core exam) covers the 18 credit hours of foundational core courses and is given in the fall term following completion of this course sequence. Part B of the comprehensive examination (field exam) covers all coursework done in the student's two dissertation field areas in their respective specialization field (Tracks 1-4). It is prepared by the faculty committee that assisted the student in selecting field coursework and is administered as soon as practicable after completion of field work. Part B consists of a written examination followed after a two-week interval with an oral examination over the written work submitted.

Dissertation requirements. The dissertation process is designed to evaluate the student's ability to successfully conduct a significant, independent applied research project. As such, it represents the culmination of a student's doctoral studies and must effectively demonstrate the student's capacity to conduct research of a professional quality.

After completing the comprehensive examination series, a student should form his or her dissertation committee. This committee advises the student during the entire dissertation process. As soon as possible after appointment of the student's dissertation committee, he or she should begin to frame a dissertation research proposal with the advice and assistance of this committee. This proposal is presented to the faculty and students in a formal colloquium. If the committee approves the proposal, the student starts work on his or her dissertation project. A minimum of one year (27 credits) of dissertation research is required and there is a five-year limit on the time allowed to complete the project. During the time a student is completing the dissertation project, he or she must be continuously enrolled for 3 credits each term. When the dissertation is finished, an oral defense of the findings is held and, if approved by the student's committee, the degree is awarded.

Advising. All incoming students in the PAP Ph.D. program are advised by the program coordinator for the first term of their coursework. They are then assigned a fac-

† Potential dissertation fields: Organizations and organizational development, human resource management, environmental and natural resource policy and administration, nonprofit management, health services administration and policy, criminal justice, tribal governance, advocacy and political organizing, labor relations, policy consensus and dispute resolution, public participation and civic capacity, international public policy, American foreign policy, international political economy, international security policy, social justice and public policy, gerontology, health behaviors, environmental health, communication and health.

ulty member who is their academic adviser until completion of Part A of the comprehensive exam. All students are required to meet with their adviser at least once per term. Until passage of Part B (fields), students are advised by the chair of their field committee. After passage of Part B of the comprehensive, their dissertation chair advises them until graduation.

Limitation on graduate/undergraduate courses. Students in the PAP program are strongly advised to use no more than 12 credits of courses offered simultaneously at the 400- and 500-level in support of their degree programs. These courses must be an integral part of the student's program, and courses with the same content must not be available on a purely graduate basis.

Limitation on by-arrangement courses. Admitted Ph.D. students may utilize no more than 12 credits of Research and/or Reading and Conference credits (501/601 and 505/605). In cases where more than 12 credits are needed because of the lack of regularly scheduled classes, the student must submit a written request waiver to their adviser for approval.

Continuous enrollment and leave of absence. All students admitted to the Ph.D. program in public administration and policy must be continuously enrolled until graduation, except for periods in which they are absent for an approved leave. Taking a minimum 3 credits per term during the regular academic year will constitute continuous enrollment. Failure to register without an approved leave may result in termination of a student's admission. Students may have no more than six terms of approved leave.

Grade requirement. A student who receives more than 9 credits of C+ or below in all coursework attempted after admission to the Ph.D. program will be dropped from the program.

Performance in core courses. A grade of C+ or below received for work performed in a core course is not considered passing. A PAP doctoral student who receives a grade of C+ or below in one of the core course offerings during fall or winter terms may not proceed to take the core course offerings in the subsequent term until the course in which a failing grade was received has been repeated, and the failing grade is replaced with a passing grade of B- or better.

Research and Teaching Opportunities

The doctoral degree in public administration and policy offers a number of research and teaching opportunities.

Hatfield Residency Program. This program, conducted in cooperation with the Hatfield School's Executive Leadership Institute, places qualified doctoral students in public and not-for-profit agencies as paid residents. Agency placements provide students opportunities to conduct dissertation research, gain advanced research experience, and receive assistance in financing their educational objectives.

Graduate research assistantships. Dependent on available funds, a number of graduate research assistantships are available each year. Students must apply for these by February 1 of the academic year in which the assistantships are desired. Assistantships pay tuition and a small additional stipend.

Teaching opportunities. All doctoral students in the program are strongly encouraged to teach prior to completing their Ph.D. programs. There are a number of opportunities available in this regard.

Teaching apprenticeships with a university faculty member. These duties can include teaching one or more class sessions, assistance in preparing courses, and correction of examinations.

Teaching in the University Studies Program. Advanced doctoral students may also teach in sophomore inquiry coursework sponsored by the Hatfield School of Government. This coursework deals largely with citizen participation and leadership. Advanced doctoral students may also propose and teach a senior Capstone course at the undergraduate level. These are interdisciplinary community-based courses required of all PSU seniors. These students will develop and implement strategies to deal with a community issue in cooperation with one or more community organizations.

Additional Information Concerning Program Regulations

Additional rules governing satisfactory completion of field area examinations, presentation of dissertation, and timely completion of doctoral program requirements, appear in the General Handbook for the Public Administration and Policy Doctoral Program issued to incoming students. Students are responsible for maintaining a personal familiarity with the rules and regulations governing the doctoral program.

Criminology and Criminal Justice

550 Urban Center

503-725-4014

www.hatfieldschool.pdx.edu/CCJ/criminology.php

B.A., B.S.

Minor

Postbaccalaureate certificate

M.S.

Ph.D.—Participating division in Urban Studies Doctoral Program and Public Administration and Policy Doctoral Program

Undergraduate program

The Division of Criminology and Criminal Justice is designed for students who are interested in studying the causes, prevention, and control of criminal activity. The division's curriculum provides students with a broad base of knowledge about crime, criminals, victims, and the criminal justice system. This includes coverage of theories, programs and research on crime prevention, policing, courts, and corrections within the context of sustainable communities. Examination of these issues occurs at individual, community, and societal levels. Moreover, the curriculum is designed to foster student skills in critical reasoning, problem solving, and written and oral communication.

Reflecting the philosophy of the university as a whole, the program emphasizes the importance of diversity, ethical treatment, and involvement in the community. Specifically, the program provides students with opportunities to apply what they have learned in the classroom to community settings.

Students in this dynamic program have the opportunity to debate some of the most controversial issues facing our nation. Are people born deviant or do they become deviant through environmental influences? Are minorities treated fairly in the criminal justice system? Should we "get tough on crime" or does this lead to tougher offenders? Does the death penalty deter crime? Is plea bargaining corrupting our judicial system? Can serious crime be prevented by mobilizing neighborhoods, redesigning cities, and creating sustainable communities?

Criminology and criminal justice is an interdisciplinary major, a fact demonstrated by the diverse backgrounds of our full-time and adjunct faculty. Students gradu-

ating from our program have a wide range of choices when they look for employment or post-graduate education. Our graduates work in local and federal law enforcement in corrections (probation and parole, correctional administration), in human services (offender counseling, victim assistance), and in fields like security and investigation within the business community. Graduates from our program also go on to pursue advanced degrees in such areas as law, criminal justice, psychology, social work, public administration, and urban planning.

Admission requirements

Admission to the department is based on general admission to the University. See page 317 for more information.

Degree requirements

Requirements for major. In addition to meeting the general University degree requirements, students who major in criminology and criminal justice (CCJ)[†] must complete core and elective courses within the division. Some of these courses have prerequisites, and students should read course descriptions in the current *PSU Bulletin* before registration. All core and elective courses submitted to satisfy the requirements for a major, whether taken at PSU or elsewhere, must be passed with a grade of “C” (2.00 GPA) or above. Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling division major requirements. The CCJ degree requirements are:

Core courses	Credits
AJ 200 Criminology and Criminal Justice	4
AJ 230 Policing in America	4
AJ 240 Punishment and Corrections	4
AJ 310 American Courts	4
AJ 320 Theories of Crime	4
AJ 330 Crime Control Strategies	4
AJ 340 Crime Analysis	4
AJ 380 Criminal Justice Research	4
AJ 404 Cooperative Education/Internship	8
AJ 420 Criminal Law and Legal Reasoning	4
AJ 490 Senior Colloquium	4
Total core credits	48

CCJ Electives	Credits
Total CCJ elective credits (minimum of 12 credits at or above 300-level)	20
Total CCJ credits	20
Total major requirements	68†

Requirements for minor. Students who minor in criminology and criminal justice must complete core and elective courses within the division. Some of these courses have prerequisites, and students should read course descriptions in the current *PSU Bulletin* before registration.

All core and elective courses submitted to satisfy the requirements for a minor, whether taken at PSU or elsewhere, must be passed with a grade of “C” (2.00 GPA) or above. Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling division major requirements. The CCJ degree requirements for a minor are:

	Credits
AJ 200 Criminology and Criminal Justice	4
One course from list below	4
AJ 230 Policing in America	
AJ 240 Punishment and Corrections	
AJ 310 American Courts	
AJ 320 Theories of Crime	4
AJ 330 Crime Control Strategies	4
CCJ elective credits	
(minimum of 8 credits at or above 300-level)	16
Total minor requirements	32

Requirements for a postbaccalaureate certificate. To earn a postbaccalaureate certificate in criminology and criminal justice students must complete core and elective courses within the division. Some of these courses have prerequisites and students should read course descriptions in the current *PSU Bulletin* before registration. All core and elective courses submitted to satisfy the requirements for a postbaccalaureate certificate, whether taken at PSU or elsewhere, must be passed with a grade of “C” (2.00 GPA) or above. Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling these requirements. The CCJ degree requirements for a postbaccalaureate certificate are:

	Credits
AJ 200 Criminology and Criminal Justice	4
Two courses from list below	8
AJ 230 Policing in America	
AJ 240 Punishment and Corrections	
AJ 310 American Courts	
AJ 320 Theories of Crime	4
AJ 330 Crime Control Strategies	4
AJ 380 Criminal Justice Research	4
AJ 420 Criminal Law and Legal Reasoning	4
AJ elective credits (minimum of 8 credits at or above 300-level)	12
Total	40

Graduate program

The Division of Criminology and Criminal Justice offers a program of study designed to provide students a broad-based understanding of the criminal justice system and society’s response to crime. A major goal of the program is to develop understanding of the applied and theoretical aspects of crime and criminal justice.

The program provides students with a high degree of flexibility and allows students to tailor the program to match their own career interests. Core coursework consists of classes in the theoretical founda-

tions of criminology and criminal justice, methodology, and criminal justice policy analysis.

Students are required to develop a specialization in a substantive area outside of the Division of Criminology and Criminal Justice. In consultation with an adviser, students identify and complete a minimum of four classes, thereby creating a specialty that is unique for each student. Potential specialization fields include public management, political science, urban studies, and geographic information systems.

Criminology and criminal justice graduate courses also support other PSU degree programs, such as the Master of Public Administration, Master of Public Policy, Master of Urban Studies, Ph.D. in Urban Studies, and Ph.D. in Public Administration and Policy.

Admission Requirements

In addition to the general University requirements for admission to graduate study, prospective students should arrange for the Division of Criminology and Criminal Justice to receive:

1. A completed Division of Criminology and Criminal Justice application form.
2. Transcripts from all prior academic institutions, irrespective of whether a degree was granted.
3. A 500-word written statement describing the applicant’s future goals and a discussion of how graduate study will aid in achieving those goals. In particular, applicants should identify courses that would contribute to their selected field of study. Statements should also describe any relevant prior academic, life, or professional experiences and how they relate to the chosen field of study.
4. Applicants, including United States citizens, whose native language is not English must present a minimum score of 550 on the Test of English as a Foreign Language (TOEFL).

In order to be considered for regular admission to the program, applicants should have a total undergraduate GPA of 3.00 or higher or a graduate GPA of 3.00 or higher for a minimum of 9 credit hours. Applicants who do not meet these requirements may be considered for conditional admission under exceptional circumstances.

Although not required, applicants are encouraged to submit GRE scores for consideration with their application.

Degree requirements

All candidates for a master’s degree must complete 50-54 graduate credits distributed as follows:

[†] Program was formerly called Administration of Justice (AJ) and course titles will continue to use AJ prefix.

[‡] Students are encouraged to fulfill their remaining University upper-division credit requirements with courses outside the CCJ Division in order to broaden their undergraduate liberal arts experience.

1. 20 credit hours must be taken in the substantive core.
2. A minimum of four classes totaling 12-16 credit hours in a specialization field.
3. 6 credit hours of thesis or research project work.
4. 12 credits of elective courses.

Substantive Core.

AJ 515 Theories of Crime	4
AJ 520 Analysis of Crime and Justice Data	4
AJ 525 Criminal Justice Theory	4
AJ 530 Criminal Justice Research	4
AJ 535 Criminal Justice Policy	4

Specialization Field

In consultation with an adviser, students will be required to develop and complete a specialization field as a part of their degree requirements. A minimum of four classes, totaling 12-16 credits must be completed in the specialization field. Students are encouraged to complete this requirement by taking courses in other academic units such as public administration, computer science, political science, or sociology. Courses may be selected from several academic units so long as they comprise a coherent field of study that will contribute to the academic development of the student.

Thesis and Graduate Project

Candidates must complete either a thesis or substantial research project. Both options require a final oral examination. A thesis is a scholarly work that demonstrates substantial capacity on the part of the student to engage in independent investigation. In order to satisfy thesis requirements, students must pose an original research question and apply appropriate methods of scholarship and methodology to that question in order to generate new knowledge. A graduate project, on the other hand, does not necessarily involve the creation of new knowledge. Rather, graduate project requirements may be satisfied by demonstrating mastery of a particular field of literature and how that literature applies to a policy issue within criminology and criminal justice.

Elective Courses

Students must satisfactorily complete 12 credit hours of elective courses, half of which must be taken in the Division of Criminology and Criminal Justice.

Courses

Courses with an asterisk () are not offered every year.*

*AJ 199

Special Studies (Credit to be arranged.)

Pass/no pass option.

AJ 200

Criminology and Criminal Justice (4)

An introduction and overview of the criminology and criminal justice major designed to pro-

vide students with an understanding of law, crime, and the criminal justice system in America. Examines the law's proactive function in teaching people how to live peacefully within their communities and the law's reactive function in sanctioning criminal behavior. Includes an introduction to various theories of crime causation and an overview of the criminal justice system and its response in processing those who transgress the law.

*AJ 210

Introduction to Juvenile Justice Process (4)

A general overview of the various activities and decisions involved in the processing of young law violators. Examination of the justice system specially designed to handle children, consideration of the many stages in the system, and considerations of issues in juvenile justice policy formulation.

*AJ 220

Crime Literacy (4)

A comprehensive survey of the historical trends and current picture of crime in America that examines: (1) methods used to collect crime data, (2) factual aspects of specific crimes, including definitions and analytical statistics, (3) characteristics of victims and arrestees, (4) public opinion, and (5) personal protection.

AJ 230

Policing in America (4)

An introduction to the study of policing in the United States. Policing is studied from three perspectives: the police officer-citizen interaction, the agency-community relationship, and the legal and ethical questions of policing in a democratic society. The course considers the history and future of policing, the police task, police strategies, and police relationships with the community and criminal justice system.

AJ 240

Punishment and Corrections (4)

Examination of historical and contemporary approaches to the punishment of adult and juvenile offenders in institutional and community settings. Includes discussion of theories of punishment as they relate to today's correctional policies and practices. Controversial topics like prisoner rights, the death penalty, and mandatory sentencing are covered.

*AJ 250

Criminal Behavior (4)

Examination of psychosocial theories of crime and identification of the individual-level factors associated with the onset, continuity, and desistance of criminal behavior in juveniles and adults. Special topics covered include the relationship between mental illness and violence, psychopathy, sexual deviancy, substance abuse, human aggression, and the rehabilitation of offenders.

*AJ 260

Criminal Justice and Popular Culture (4)

This course analyzes mass media products such as news programs and periodicals, music, film, and fictional literature to investigate the representation of crime and criminal justice in popular culture and the media impact on the criminal justice system.

*AJ 299

Special Studies (Credit to be arranged)

Pass/no pass option.

*AJ 302

Police Dynamics (4)

A critical examination of the various professional and community influences on police behavior, together with the social problems generally created by such forces, and potential remedial actions.

AJ 310

American Courts (4)

Comprehensive survey of the role and function of courts in the United States. Emphasis placed on the operations of trial-level courts hearing criminal cases. Explores the roles and duties of courtroom participants, structure of the judiciary, relationship between the formal rule of law and daily activities of courts, decision-making, and perspectives from which to view the courts. Attention also to appellate courts, juvenile courts, court reform, and issues of gender, race, and ethnicity.

AJ 317

Punishment and Corrections (4)

Examines theories of punishment as they relate to the various treatment and rehabilitation policies and practices that affect offenders in institutional and community settings. Specific approaches being examined include mandatory sentencing laws, offender education programs, institutional and community drug treatment programs, boot camps, house arrest, intensive supervision probation, work release, and community work service.

AJ 320

Theories of Crime (4)

An overview of historical, sociological, biological, psychological, economic, and Marxist theories of crime causation. Particular attention is made to critically analyzing each theory presented in terms of its internal consistency and logic as well as its fit with data on crime, criminals, and victims. Policy implications stemming from these theories will be discussed.

AJ 330

Crime Control Strategies (4)

An analysis of the methods used to control crime in American society. Emphasis on understanding the sometimes conflicting goals of the criminal justice system; attention is given to the general categories of general and specific deterrence, aggressive enforcement, situational and environmental defensive measures, and modification of the social order. Special attention will be given to how other countries control crime and the problems of comparison because of political and cultural differences.

AJ 340

Crime Analysis (4)

An introduction to the basic methods used in analyzing data from criminal justice agencies, including temporal and spatial analysis of crime patterns, calculation of crime rates, descriptive analyses of victim and offender characteristics, recidivism, and the identification of offense typologies. Students get hands-on experience coding, analyzing, interpreting, and presenting crime data from a number of sources like police homicide reports, the FBI, Department of Corrections, and attitudinal surveys. Prerequisite: CS 105 or basic computing skills.

AJ 355*Perspectives on Terrorism (4)**

A survey of international and domestic terrorism, the organizations, philosophies, key players, counter-terror organizations, and response. Investigation of the social, psychological, cultural, historical, political, religious, and economic dynamics of the phenomena will provide preparation for discussion of possible approaches to control. Prerequisite: CS105 or basic computing skills.

AJ 360*Victimology (4)**

Provides a comprehensive overview of the study of victims of crime. This includes research on the process, etiology and consequences of criminal victimization. The criminal justice's response to crime victims, both historically and more recently, will be discussed in terms of the changing role of victims in the criminal equation. Topics covered may include restorative justice, restitution, and mediation programs now offered through the criminal justice system.

AJ 370**Women, Crime, and Justice (4)**

Women as criminals, victims, and professionals in the criminal justice system are the focus of this course. Theories, policies, and relevant empirical studies will be discussed in the context of the historical, socio-political, and cultural forces that shaped them. Topics may include: girls in gangs, female police officers, mothers behind bars, domestic violence, and pregnancy and drug use.

AJ 380**Criminal Justice Research (4)**

Introduction to the basic concepts of social science research including hypothesis testing, research design, causality, sampling, and measurement. Course is intended to provide students with necessary skills to critically evaluate crime and delinquency research as well as design and implement basic research projects.

AJ 399*Special Studies (Credit to be arranged)**

Pass/no pass option.

AJ 401/501**Research (Credit to be arranged)**

Consent of instructor.

AJ 402/502**Independent Study (Credit to be arranged)**

Consent of instructor.

AJ 404/504**Cooperative Education/Internship (Credit to be arranged)**

Supervised placement in a community criminal justice agency or on a criminal justice research project. Evaluations of students are completed by agency staff and/or University faculty. A minimum of 8 credits is required of CCJ majors. An additional 8 credits can be applied toward CCJ elective credits required of majors. Required: senior status and consent of instructor.

AJ 405/505**Reading and Conference (Credit to be arranged)**

Consent of instructor.

AJ 406/506**Projects (Credit to be arranged)**

Consent of instructor.

AJ 407/507**Seminar (Credit to be arranged)**

Consent of instructor.

AJ 408/508**Workshop (Credit to be arranged)**

Consent of instructor.

AJ 409**Practicum (Credit to be arranged)**

Consent of instructor and senior status.

AJ 410/510**Selected Topics (Credit to be arranged)**

Consent of instructor. Pass/no pass option.

AJ 415*Counseling Skills for Criminal Justice (4)**

A practice-oriented course covering the basic interviewing, assessment, and counseling skills routinely used by professionals in the criminal justice field (e.g., police, correctional staff, probation officers, prosecutors). Includes coverage of techniques for developing rapport with clients, soliciting information, screening for mental illness, threat/risk assessment, and crisis intervention. Recommended prerequisite: AJ 250

AJ 420**Criminal Law and Legal Reasoning (4)**

Study of the basic concepts related to criminal law, including: historical development, legal elements of crime and proof, defenses and mitigation, reasonable doubt, and presumptions of fact; with particular emphasis on the application of logical reasoning to make legal decisions. Prerequisite: senior status.

AJ 440**Constitutional Criminal Procedures (4)**

A critical examination of the legal controls on the administration of criminal justice, with special attention to current court decisions related to such issues as search and seizure, admissions and confessions, wiretapping and eavesdropping, right to counsel, fair trial, self incrimination, cruel and unusual punishment. Prerequisite: AJ 420. (Normally offered winter term only.)

AJ 450/550*Comparative Perspective of Criminal Justice (4/3)**

An exploration of international criminal justice systems that compares and contrasts the general features and cultural foundations of criminal justice procedures and institutions in different countries throughout the world. Prerequisite: admission to graduate program in CCJ.

AJ 455**Ethical Leadership in Criminal Justice (4)**

Ethical leadership is a topic of longstanding theoretical and practical importance for the criminal justice system. Criminal and social justice issues are deeply embedded in the social fabric of the community and ethical leadership issues frequently have ramifications beyond the boundaries of our discipline. Students will be taught to recognize, understand, and analyze the significance of ethical leadership for the criminal justice system and the community within which it exists. Recommended prerequisite: AJ 200.

AJ 460**Court Procedures (4)**

General review of the major activities and procedures involved in the conduct of criminal trials, with extensive use of mock trial exercises.

Prerequisite: AJ 440. (Normally offered spring term only.)

AJ 465**Criminology and Social Justice Theory (4)**

Begins with an analysis of critical criminology theories and their underlying assumptions. Explores the connections between critical criminology and social justice, the social justice movement, and the communities wherein social justice is practiced. Application of social justice theory to criminal justice policy and practice has created a new set of social response mechanisms to crime and delinquency: mediation, restitution, and restorative justice. Prerequisite: AJ 200.

AJ 470*Morality, Justice, and the Law (4)**

Analysis of contemporary problems and issues faced by those working in criminal justice or studying criminology. The course is designed to explore the range of roles, responsibilities, and dilemmas facing professionals in the justice system. Topics may include prosecutorial responsibility, police conduct, and community involvement in criminal justice. Recommended prerequisite: AJ 200.

AJ 480/580*Community-based Treatment of Offenders (4)**

An analysis of the history, philosophy, theory, and function of probation, parole, pardon, halfway houses, work release centers, and other forms of community-based treatment; evaluation of the effectiveness of treatment of the offender in the community; contemporary usage of the presentence investigation report, selection, supervision, and release of probationers and parolees; exploration of current innovations in corrections such as use of volunteers and offenders as correctional manpower resources. Prerequisites: AJ 480: AJ 317; AJ 580: admission to graduate program in CCJ.

AJ 490**Senior Colloquium (4)**

An integration of important administration of justice concepts and knowledge for graduating majors, who will individually prepare a research paper on a selected problem and present findings to interested students and faculty. Prerequisites: senior status and completion of AJ 330 and AJ 380.

AJ 501/601**Research (Credit to be arranged.)****AJ 502/602****Independent Study (Credit to be arranged.)****AJ 503/603****Thesis (Credit to be arranged.)****AJ 504/604****Internship (Credit to be arranged.)****AJ 505/605****Reading and Conference (Credit to be arranged.)****AJ 506/606****Projects (Credit to be arranged.)****AJ 507/607****Seminar (Credit to be arranged.)****AJ 508/608****Workshop (Credit to be arranged.)****AJ 509/609****Graduate Practicum (Credit to be arranged.)**

**AJ 515/615
Theories of Crime (4)**

An overview of historical, sociological, biological, psychological, economic, and Marxist theories of crime causation. Particular attention is given to analyzing each theory presented in terms of its internal consistency and logic as well as its fit with data on crime, criminals, and victims. Students will have to test the effectiveness of these individual theories through the research literature available in the criminal justice literature. Policy and programmatic implications stemming from these theories and what the research literature indicates will be discussed in class.

**AJ 520/620
Analysis of Crime and Justice Data (4)**

An applied approach to the analysis of criminal justice data. Includes an overview of the collection, storage, and retrieval of data from various sources (e.g., police, courts, corrections). Basic techniques commonly used to analyze and present criminal justice data are covered with an emphasis on the use of empirical findings to solve problems and develop policy. Advanced statistical procedures introduced.

**AJ 525/625
Criminal Justice Theory (4)**

This course introduces students to the theoretical work on criminal justice process, decision-making, and discretion using multiple disciplinary perspectives. Topics discussed include examination of the stages of the justice process and theoretical approaches to studying individual, organizational, system, and political behavior. Emphasis is placed on the practical utilization of theory to inform development of research problems.

**AJ 530/630
Criminal Justice Research (4)**

The purpose of the course is to familiarize students with typical research methods used in the study of criminology and criminal justice along with their resulting databases. This knowledge base will be used as a foundation upon which to teach students how to critically research in criminology and criminal justice. Recommended prerequisite: AJ 520/620.

**AJ 535/635
Criminal Justice Policy (4)**

An advanced course in criminal justice policy analysis. Course examines the development, implementation, and outcomes of interventions designed to impact crime and the criminal justice system. Theories of criminal justice intervention will be studied across multiple levels: individual, organizational, community, and system. Emphasis is placed on the utilization of research findings to inform criminal justice policy and future research. Recommended prerequisites: AJ 515/615, AJ 525/625, and AJ 530/630.

***AJ 538/638
Historical Perspective of Criminal Justice (4)**

A chronological survey of significant social events and trends in Western and Eastern civilizations that have influenced crime and the development of law, the police, the courts, and corrections and have formed the interrelationships among these parts of the criminal justice system.

***AJ 540/640
Legal Perspective of Criminal Justice (4)**

An advanced course that examines the legal environment within which the criminal and quasi-criminal justice systems function, with particular emphasis on philosophical and procedural issues related to deprivation of liberty decisions.

***AJ 545/645
Economic and Political Perspective of Criminal Justice (4)**

An advanced course that explores the political and economic influences on the formulation and administration of public policies related to criminal justice system issues.

***AJ 550/650
Comparative Perspectives of Criminal Justice (4)**

An exploration of international criminal justice systems that compares and contrasts the general features and cultural foundations of criminal justice procedures and institutions in different countries throughout the world.

Political Science

650 Urban Center
503-725-3921
www.hatfieldschool.pdx.edu/PS/pol-science.php

**B.A., B.S.
Minor
Secondary Education Program—Social Science
M.A., M.S.
M.A.T. and M.S.T. (General Social Science)
Ph.D.—Participating division in Public Administration and Policy Doctoral Program**

Undergraduate programs

The program in political science leading to the B.A. or B.S. degree is designed to meet the needs of the liberal arts major who wishes to learn more about public and international affairs, government, and the demands of citizenship. It is appropriate for professionally motivated students who wish to pursue careers in political science, public administration, international organizations, domestic government, communications, education, or law. It is also appropriate for inquiring students desiring to learn more about the way human beings live together and the structures and institutions they have developed (or might develop) to facilitate social cooperation and conflict management.

Admission requirements

Admission to the department is based on general admission to the University. See page 45 for more information.

Degree requirements

Once a student has been admitted to Portland State University, upper-division courses used to meet political science major requirements must be taken at the University. Courses taken at another college or university must have received prior approval from the Division of Political Science. All courses used to satisfy political science major requirements, whether taken at PSU or elsewhere, must be graded C or above.

Requirements for major. The major offers a traditional course of study in political science that involves some exposure to three basic areas of the discipline.

In addition to meeting the University's general education requirements, a student wishing to pursue a basic major in political science must take a minimum of 48 credits in political science distributed as follows:

	Credits
PS 200 Introduction to Politics.....	4
One 400-level course in each of the three fields listed below:.....	12
Area I—American Politics	
Area II—International/Comparative Politics	
Area III—Political Theory/Methodology	
Additional upper-division electives.....	20
Additional electives.....	12
	Total 48

Requirements for major with politics of diversity option. The politics of diversity option offers students the opportunity to pursue an interdisciplinary course of study, under the supervision of a member of the political science faculty, in some aspect of the politics of diversity. Students choosing this option must select a faculty adviser from the political science faculty who will supervise the student's program and advise them on how to proceed. This option encourages students to identify some basic issue area or problem area that involves the politics of diversity that will become the subject of analysis and research. Divisional courses associated with the politics of diversity option are arranged under three topical headings: diversity in America, regional and global diversity, and diversity and justice. Information regarding the courses associated with each of these areas is available at the division office.

	Credits
PS 200 Introduction to Politics.....	4
PS 401 Research.....	4
Preparation and submission of a concluding essay, prepared under the adviser's supervision, on a topic of the student's choosing.....	4
PS 407 Seminar.....	4
Upper-division electives.....	32

Sub-total in Political Science 44

† These courses are to be selected with the advice and consent of a student's adviser. A list of recommended outside courses is available at the Political Science Office.

†Upper-division work from selected courses outside political science	16
Total	60

Requirements for major with politics of conflict and cooperation option. The politics of conflict and cooperation option offers students the opportunity to pursue an interdisciplinary course of study, again under the supervision of a member of the political science faculty, in some aspect of the politics of conflict and its resolution at the national and international level. Students choosing this option must select a faculty adviser from the political science faculty who will supervise the students' program and advise them on how to proceed. This option encourages students to identify some basic issue area or problem area that involves the politics of conflict and cooperation that will become the subject of analysis and research. Courses associated with the politics of conflict and cooperation option are arranged under three topical headings: conflict and cooperation in America, international conflict and cooperation, and theories of conflict and cooperation. Information regarding the courses associated with each of these areas is available at the division office.

	Credits
PS 200 Introduction to Politics.....	4
PS 401 Research	4
Preparation and submission of a concluding essay, prepared under the adviser's supervision, on a topic of the student's choosing.	
PS 407 Seminar	4
Upper-division electives	32
Sub-total in Political Science	44
†Upper-division work from selected courses outside political science	16
Total	60

Requirements for minor. To earn a minor in political science, a student must complete 28 credits in political science (of which 16 must be taken in residence at PSU). This must include the following:

	Credits
PS 200 Introduction to Politics.....	4
One 400-level course in two of the three fields listed below:	8
Area I—American Politics	
Area II—International/Comparative Politics	
Area III—Political Theory/Methodology	
Additional upper-division political science electives taken in residence at PSU (no more than 8 credits of PS 404, 405, 409, 410)	16
Total	28

All courses submitted to satisfy the requirement for a minor in political science must be passed with a grade of C or above. Students are encouraged to take political science courses that complement their academic interests and scholarly goals. The political science minor is designed to be as flexible as possible to facilitate this end. Students considering a minor in political science are strongly encouraged to consult with a political science adviser to work out an instructional program that meets their needs.

SECONDARY EDUCATION PROGRAM

(See General Studies: Social Science page 142.)

Graduate programs

The Division of Political Science offers graduate work leading to the Master of Arts and Master of Science degrees. The division also offers Master of Arts in Teaching and Master of Science in Teaching (General Social Science) degrees with a political science concentration for students pursuing a career in teaching. Political science is one of five participating disciplines offering a major concentration in the Public Administration and Policy Ph.D. program; for information relating to this program, see page 314.

The Division of Political Science offers work in political theory and philosophy, methodology, international relations and organization, comparative politics, American politics, American federalism, public policy, public law, political parties, media and public opinion, and political economy.

Admission requirements

For admission as a regular degree student, the applicant must:

1. Have at least a B average for all work in the junior and senior years, or must have completed a minimum of 12 credits in graduate-level courses with at least a 3.10 GPA (on a 4.00 point scale).
2. Submit satisfactory scores on either the verbal and quantitative sections of the Graduate Record Examination or the Miller's Analogy Test. The Miller's Analogy Test is given on campus by Counseling and Testing Services.
3. Request that two letters of recommendation be sent directly to the Division of Political Science from faculty members at colleges or universities previously attended or from others in a position to comment on the student's academic and professional background and experience.
4. Forward to the division a 500-word statement concerning the applicant's academic and professional goals. (This statement should indicate the student's desired fields of concentration.)
5. Submit, if the applicant is a foreign student whose major language is not English, a satisfactory score on the Test of English as a Foreign Language.

Students applying for admission to the graduate Political Science program who wish to be considered for graduate assistantships should submit their applications (Form GO-8) by May 1.

Degree requirements

Programs leading to the different master's degrees offered by the Division of Political Science are designed to be completed in six academic terms. The University's master's degree requirements are listed on page 70. Specific divisional requirements follow.

Master of Arts or Master of Science.

All candidates for a master's degree in political science must complete 48 graduate credits from course offerings. Students are expected to pass written examinations in two of the four following fields of study:

1. American politics
2. International politics
3. Comparative politics
4. Political theory

Specific requirements are as follows:

1. PS 593 Philosophy of Social Science
2. 20 credits in each of the two fields to be prepared for examination purposes
3. 2 graduate (500-level) seminars (credits to be included in credits for field examinations)
4. 6 credits of thesis or research paper work.
5. 4 credits may be taken outside political science with an adviser's approval.

Total credits 50

Students who wish to earn an M.S. in political science are required to take PS 595 Research Methods for Political Science (passed with a grade of B- or higher).

Candidates for the Master of Arts degree must pass an examination in a foreign language administered by the Department of Foreign Languages and Literatures by the deadlines established by the Graduate Studies Office. The foreign language examination must be completed by the sixth week of the term in which the candidate expects to receive the degree.

Examinations. Candidates for the M.A. and M.S. degrees will be required to take an examination on each of the two fields of concentration. These written examinations normally will be taken during the term in which the candidate will complete 44 credits of the graduate program. The written examinations may be followed by an oral examination at the option of the candidate's examiners.

The candidate who is planning to take the examinations in a particular term must notify the divisional office coordinator of such intention by the Friday of the second week of that term. The candidate must by that time have consulted with the faculty examiners about the books, articles, and other materials in the two fields over which the student will be examined.

† These courses are to be selected with the advice and consent of a student's adviser. A list of recommended outside courses is available at the Political Science Office.

Examinations will not be given in the absence of such consultation. The written examinations must be taken by the eighth week of the term (sixth week if it is Summer Session) with the orals, if required, taking place during the following two weeks.

Thesis and substantial research paper. Candidates must submit a thesis or substantial research paper to be followed by an oral examination. The substantial research paper is the scholarly equivalent of a thesis but need not meet the formatting requirements of the graduate school and library.

Master of Arts in Teaching And Master of Science in Teaching. Programs with a political science concentration will be designed to enhance the candidates' capacity to meet their particular teaching responsibilities. See page 69 for University requirements for these degrees.

Courses

Courses with an asterisk () are not offered every year.*

PS 101

United States Government (4)

An examination is made of American government in theory and practice. Topics include: the constitutional foundations of American government; federalism, civil liberties, and civil rights; Congress and the legislative process; the presidency and modern bureaucracy; the Supreme Court and judicial policy-making.

PS 102

United States Politics (4)

Introduction to issues and trends in political culture, political behavior, and public policy making. Topics include: public opinion, political parties and pressure groups, elections and voting behavior, political participation, the role of the media, policy making, the budget process, domestic policy, and national security policy.

PS 199

Special Studies (Credit to be arranged.)

Consent of instructor.

PS 200

Introduction to Politics (4)

Basic introduction to the central themes and fundamental issues of political life. Examines the nature and meaning of politics and political association in both domestic and international settings. Fundamental concepts and ideas associated with government, and politics more generally, are explored, along with the nature of political culture and the way this culture is reflected in the institutions and operations of government.

PS 203

Intro to State and Local Politics (4)

Provides an introduction to the role and structure of state and local governments, and examines the forces that influence subnational politics. Topics include federalism, intergovernmental relations, elections, the policy-making process, and the problems confronting states and communities.

PS 204

Comparative Politics (4)

A general survey of theories, concepts, and methods employed in comparative politics. Attention given to political behavior, structures, and processes.

PS 205

International Politics (4)

An analysis of the nature of relations among nations, with specific reference to contemporary international issues. Motivating factors will be examined, including nationalism, economic rivalries, and the quest for security. Also treated will be the problem of national sovereignty and its relationship to international cooperation, changing threats to international security in the post-Cold War era, and the increasing importance of international economic competition and cooperation.

PS 221

Introduction to Public Law (4)

Introduction to the nature and function of public law in the United States. The course focuses on fundamental problems of jurisprudence, the relation between law and politics, the nature and function of the court system, judicial process, and the workings of the criminal justice system.

*PS 312

Legislative Process (4)

An examination of the role of legislatures in state politics. Particular attention is given to the forces that shape legislative elections, the relationship between legislatures and governors, and efforts to reform legislative politics. Recommended prerequisites: PS 101 and 102.

PS 313

The Power Game: A Simulation of Washington Politics (4)

Examines the nature of political power, the complexities involved in policy-making, and the relationship between the major political actors in Washington, D.C. The course revolves around a simulation of the U.S. government in which students play the roles of real members of Congress, the executive branch, interest groups, and the press.

PS 317

Film and Politics (4)

Examines the political meanings of films. Topics include: how films reflect, and sometimes challenge, basic themes in American political culture; how filmmakers capture and encode images in ways that tell a culturally-pleasing story; how audiences make sense of these images and stories to construct particular understanding of power, government, and the individual; and the relationship between Hollywood and politics.

PS 318

Media, Opinion, and Voting (4)

Course examines the interaction between the mass media, public opinion, and voting behavior in the United States. Competing theories of media effects on public opinion and voting behavior are analyzed, as are competing proposals for reforming electoral campaigns, campaign advertising, presidential debates, and other features of mass-mediated elections in order to enhance citizen participation. Key questions students will consider include the degree of responsibility that politicians, journalists, and citizens should assume for improv-

ing citizen engagement with electoral politics. Recommended prerequisite: PS 102.

*PS 319

Politics of the Environment (4)

The human relationship with nature is a source of much political conflict and has been since the emergence of the state. This course explores the short- and long-term origins of current conflicts, the emergence of political movements around environmental issues, alternative world views regarding nature, and the distinctiveness of politics around these issues. Specific conflicts will be examined, including the relationship between human attempts to control nature and human hierarchies, population, water, and conservation of biodiversity.

PS 321

The Supreme Court and American Politics (4)

Basic introduction to the relation between law and politics in America through an analysis of the work of the U.S. Supreme Court. The course uses selective case law in order to explore the place of the court in America's constitutional structure, the way the court forms and shapes policy through constitutional interpretation, and the way political forces and influences shape Court practices, judicial selection, and the decision making processes. Recommended prerequisite: PS 221.

PS 325

Politics and the Legal Enforcement of Morals (4)

Critical examination of law as a mechanism for the enforcement of moral standards. The limits of law and political authority more generally are explored through an analysis of specific problem areas associated with the legal enforcement of morality. These include, but are not limited to: the use of criminal justice to enforce standards of conventional morality, political tolerance, civil disobedience, and the politics of law and order. Recommended prerequisite: PS 221.

*PS 331

Oregon Politics (4)

An examination of political structures and policy trends in the state of Oregon. Attention is given to local governments as well as state government with special emphasis upon the relationships among different governmental entities.

PS 343

Conflict and Cooperation in World Politics (4)

This course focuses on substantive global problems and issues areas such as war, conflict resolution, nationalism, arms races, and global scarcities. The historical roots of the problems as well as their contemporary manifestations are examined using both substantive and theoretical materials. The sources of conflict and conflict resolution are also examined. Recommended prerequisite: PS 205.

PS 345

U.S. Foreign Policy: The Cold War and Beyond (4)

Analysis of the U.S. foreign policy process, its motives, objectives, and manner of implementation, in the major developments of each administration since 1945. Emphasis is on U.S. relations with the U.S.S.R./Russia and the Third World. Recommended prerequisite: PS 205.

PS 352*Western European Politics (4)**

An analysis of the political systems, processes, and politics in major countries of Western Europe, with special reference to France and Germany, as well as an overview of Italy, Sweden, or Switzerland. Also a short look at the organizations for European integration. Recommended prerequisites: PS 204 or 205.

PS 353**Introduction to Latin American Politics (4)**

An examination of a number of Latin American countries (Argentina, Chile, Brazil, Mexico, Peru, etc.) in comparative perspective. Topics covered include: the emergence and decline of various regime types within each of these nation-states; the role of the state, various state sectors, state autonomy and state capacity; the emergence of various social classes, class coalition and the impact of both of these on the state; the importance of international factors such as the international economy and the United States.

PS 354**Introduction to Caribbean Politics (4)**

Provides an opportunity to examine a number of Caribbean countries (Jamaica, Surinam, Trinidad, Haiti, etc.) in comparative perspective. Topics covered include: the central role of the state, the impact of prior colonial masters and the manner of acquiring independence upon political and economic outcomes, country size and the performance of these nation-states, political parties, race, and class.

PS 361**Introduction to the Politics of the Middle East (4)**

Introduction to Middle Eastern political systems. Focus will be on the nature of traditional politics, modernization and political development in the region, social stratification, institutions of government, and the political systems of selected Middle East countries. Recommended prerequisite: PS 204 or 205.

PS 362*Arab-Israeli Conflict (4)**

Examination of the conflicting ideological perspectives, the formation of the state of Israel, rise of Arab nationalism, emergence of Palestinian nationalism, the Arab-Israeli wars, rise of Palestinian activism, diplomatic efforts at partial settlements, and possibilities of a comprehensive settlement. Special attention is given to those elements opposed to a final settlement of the conflict, both within Israel and among the Palestinian and greater Arab communities. Recommended prerequisite: PS 204, 205, or 361.

PS 371**War and Morality (4)**

Examines the limits observed by states in their resort to war and in the conduct of battle. Surveys the historical, moral, and legal foundations of these limits, and their enduring relevance in light of changes in international conflict and modern warfare. Topics include aggression and self-defense, preemption, humanitarian intervention, terrorism, torture, and war crimes.

PS 380**Women and Politics (4)**

Analysis of the political role of women in politics. Reviews the historical and contemporary analyses of women's participation and status in politics. Recommended prerequisite: PS 101 or 102.

PS 381**Introduction to Theory (4)**

General introduction to the problems of political theory. A selective survey of the political ideas of Plato, Machiavelli, Locke, Rousseau, Mill, and Marx which introduced some of the major traditions of political thought in the west. The foundations of the communitarian, republican, and liberal political discourse are examined and discussed. Recommended prerequisite: PS 200.

PS 385**Modern Ideologies (4)**

An examination of the enduring political images of the modern world. Attention is given to the new, developing ideologies in the Third-World countries and the new left as well as to the more traditional concerns of liberalism, communism, and fascism.

PS 387*Politics and Fiction (4)**

This course explores various themes associated with politics as they are presented in fictional media. The course integrates traditional academic material with novels, film, television, poetry, etc., in order to expand student awareness of politics and public life. Recommended prerequisite: PS 200.

PS 399**Special Studies (Credit to be arranged.)****PS 401/501****Research (Credit to be arranged.)**

Consent of instructor.

PS 403**Honors Thesis (Credit to be arranged.)**

Consent of instructor.

PS 404/504**Cooperative Education/Internship (Credit to be arranged.)****PS 405/505****Reading and Conference (Credit to be arranged.)****PS 407/507 Seminar (Credit to be arranged.)**

Reading and discussion about an area of political science, with a research project required. Enrollment limited.

PS 409/509**Practicum (Credit to be arranged.)**

Consent of instructor.

PS 410/510**Selected Topics (Credit to be arranged.)**

Consent of instructor.

PS 412/512**The Presidency (4)**

Analysis of the institution, functions, and problems of the presidency. Special attention given to presidential elections, presidential powers, relations with media, presidential leadership, White House staff, executive-legislative relations, and the presidential role in domestic, economic, foreign policy making and execution. Recommended prerequisites: PS 101 and 102.

PS 413/513**Congress (4)**

Study of the structure, organization, powers and operations of Congress. Topics covered include: the evolution of Congress, congressional recruitment and elections, legislative functions, the membership, the leaders, the committee system, the rules and procedures, executive-legislative relations, pressure groups,

lobbying, and reform. Recommended prerequisites: PS 101 and 102.

PS 414/514**Issues in Public Policy (4)**

A study of selected major policies and programs of governmental regulation and service. Emphasis is placed upon the formation, administration, and substantive content of policies in such areas as transportation, public utility regulation, medical care, civil rights, education, agriculture, natural resources, and antitrust laws and the preservation of competition. Recommended prerequisite: PS 215.

PS 416/516**Political Parties and Elections (4)**

An examination of political parties and elections in America. Covers such topics as: the changing role of party organizations, machine politics, electoral rules, candidate recruitment, the nomination process, campaign strategies and tactics, campaign finance, and electoral reform. Recommended prerequisites: PS 101 and 102.

PS 417/517**Interest Groups (4)**

This course analyzes the role of interest groups in the political process. Particular attention is given to why some interests are more successful at forming groups and influencing politics than others. The course also examines techniques used to lobby legislatures, the executive branch, and the courts. Recommended prerequisites: PS 101 and 102.

PS 418/518*Contemporary Political Protest in America (4)**

Analyzes the role of social movements in recent American history. The course blends theoretical readings with empirical research into specific movements. Movements considered include but are not limited to: civil rights, the new left, public interest reform, the freeze movement, the women's movement, the Christian Right, and the paramilitary/skinhead movement.

PS 419/519*Political Reform (4)**

Examines the concerns that drive the demand for political reform in America, and how specific reform proposals may affect the political system. The first part of the course focuses on a variety of proposals to open up the electoral system and to improve representation. The second part examines various reforms that are designed to make the government work more effectively and efficiently.

PS 422/522**Constitutional Law (4)**

A study of the way in which the Supreme Court has shaped and influenced governmental structure and political power. Special attention is given to judicial decisions in the areas of federalism, separation of powers, the commerce clause, and the authority of the presidency. Recommended prerequisite: PS 321.

PS 423/523**Civil Liberties (4)**

A study of Supreme Court decisions that affect individual rights and liberties. Areas of concentration include, but are not limited to, freedom of speech and press, religious liberty, criminal justice, racial justice, gender justice, and the right to privacy. Recommended prerequisites: PS 321 or 221.

PS 425/525*Women and the Law (4)**

Examines the relationship between women and the law. The first half of the course considers several theories of women's equality. During the second half of the course students will apply these theories to a variety of problems in gender justice. Substantive issues covered may include: sexual harassment, abortion, fetal protection policies, and pornography. This course is the same as WS 424; course may only be taken once for credit.

PS 426/526*The Politics of the News (4)**

Explores the role of the news media in political life and the political and economic forces shaping the news. Examines the purposes and functions of mass media in a democracy, the legal and economic structure of the American media, and the journalistic practices and communications strategies that contribute to news coverage of politics.

PS 427/527**The Politics of Public Opinion (4)**

Course provides students with solid foundations for understanding the nature and evaluating the role of public opinion in American democracy. It will also teach students how to interpret public opinion polls intelligently. Specific topics covered will include how "public opinion" has been defined historically and in contemporary discourse; the various influences that shape peoples' values, beliefs, and attitudes about politics; the methods that pollsters and survey researchers use to measure public opinion and problems with those methods; and the content of Americans' views on controversial political issues. Recommended prerequisite: PS 318.

PS 428/528**The Politics of Law and Order (4)**

As American crime control policies have become increasingly punitive, the criminal justice system has expanded in size and scope, crime control has become increasingly federalized, and record numbers of Americans have been incarcerated. Class explores what is political about crime control and why American crime policy takes on a particularly punitive cast. In particular, carefully examines the social construction of the crime problem: how popular beliefs about criminals and the causes of crime interact with the media and the political system to create a style of crime policy that is uniquely American. Recommended prerequisite: PS 221.

PS 431/531**State and Local Politics (4)**

Intensive examination of the role of the states and cities in the federal system. The course pays particular attention to the importance of political culture in shaping state politics and power relationships between the different levels and branches of government. Oregon's political experiences are used as example and for comparison. Recommended prerequisite: PS 203.

PS 432**Great Tribal Leaders (4)**

Course is based on videotaped interviews with contemporary American Indian leaders discussing the personal and social forces that shaped them and the roles they played in shaping federal Indian policy, law, and natural

resource management. Key areas of study include historic eras of federal Indian policy; the exercise of power by federal legislative, judicial, and executive branches and their affects on tribal lives and societies; the continuing survival of tribes; and the evolution of tribal governments to meet unforeseen and overwhelming challenges. Recommended prerequisite: PS 101.

PS 441/541**World Politics (4)**

This course introduces students to the various levels of analysis used in explaining world political events. Examined are a number of conceptual elements of world politics, e.g., power, interdependence, integration, and levels of analysis, as well as certain substantive elements, e.g., international law and organization. Contrasts are drawn between power seeking and order-seeking behaviors of nation states. Recommended prerequisite: PS 205.

PS 442/542**Contemporary Theories of World Politics (4)**

This course presents an examination of the major theories and methodological techniques employed in the analysis of world politics. Both qualitative and quantitative methods will be used, evaluated, and applied to problems of research on world politics. Techniques of research design construction will be emphasized. Recommended prerequisite: PS 441.

PS 446/546**National and International Security Policies (4)**

A comparison of national and international security systems, strategies, and policies. Emphasis will be on the current issues arising in these security systems and on the problems that arise when their needs conflict. Particular emphasis will be placed on contending theories of national and international security. Recommended prerequisite: PS 205 or 441.

PS 447/547*International Organization (4)**

The nature and extent of the organization of interaction among nations. Focus on the United Nations, but illustrations and generalization from a wide range of regional and functional organizations including the specialized agencies. Emphasis on the processes of communication, interaction, and negotiation within the organizational environment.

PS 448/548**International Law (4)**

Introduction to public international law. Particular emphasis is placed on the interplay of politics and law in the international system. Types of law, sources of law, law creating agencies, law applying agencies are considered. Contemporary substantive issues in international law will be discussed. Recommended prerequisite: PS 205 or 441.

PS 449/549*International Environmental Politics and Law (4)**

Explores various environmental problems and issue areas that exist between and among nation-states. There will be an exploration of the political difficulties that impede solutions and the various pathways that may lead to environmental cooperation. There will also be a focus on the international legal regimes and

international institutions designed to regulate environmental problems.

PS 451/551*British and Commonwealth Governments (4)**

A study of the constitutional development, the political processes, and the political cultures of the United Kingdom and selected member countries of the Commonwealth.

PS 452/552**The European Union (4)**

Focuses on how the EU has evolved since its beginnings in the 1950s, on its present-day organization and functions, and on how the member countries interact with one another in making EU policies for jointly regulating their internal economies and societies as well as their external policies, i.e., how the EU members also try to manage their relations with the rest of the world. This course is the same as Intl 452; course may only be taken once for credit.

PS 454/554**International Political Economy (4)**

A study of the contending theories of international political economy: power and interdependence, Regime Theory, dependency, integration, and functionalism, as well as the ideologies of political economy—the liberal, national, and Marxist perspectives. Also considered are the politics of trade, aid, and investment. Recommended prerequisite: PS 205 or 441.

PS 455/555**Politics of Economic Reform in Emerging Market Countries (4)**

Explores the process of economic reform in a comparative and international setting by focusing on emerging market countries (e.g., Argentina, Brazil, Mexico, Indonesia, Poland, Turkey, and Thailand). Designed to give a more in-depth analysis of reform policies for the students. Recommended prerequisite: PS 454/554.

PS 458/558**Political Economy of International Security (4)**

Surveys the economic dimensions of war, peace, and national defense in both historical and contemporary contexts. Topics include trade and conflict, economic statecraft, hegemony and imperialism, arms production and transfer, the military-industrial complex, and the revolution in military affairs. Recommended prerequisite: PS 205.

PS 460/560**Political Development in Modern Turkey (4)**

Designed to provide students with an in-depth study of political development literature with a focus on modern Turkey. Examines how modern Turkish republic emerged from the ashes of the Ottoman Empire and evaluate stages of political development during the first, second, and third republic. Finally, assesses the implications of Turkey's new geopolitics (since the end of the Cold War) on Turkish political and economic development in a global perspective. This course is the same as Intl 460/560; may only be taken once for credit.

PS 461/561**Politics of Economic Reform in Modern Turkey (4)**

Course examines the politics of planned economic growth under the Republican Peoples Party, transition to the import-substituting

growth model during the post-WWII era, problems associated with economic stagnation in the 1970s, and transformation of the Turkish economy during the 1980s and 1990s. The last two decades provide important insight into how politics and economics (domestic as well as international) converge in shaping Turkey's economic growth strategies. This course is the same as Intl 461/561; may only be taken once for credit.

***PS 462/562**

International Relations of the Middle East (4)

Examination of the external dimension of Middle East politics; the role of the great powers; brief analysis of the British and French roles since 1945; extended analysis of American and Soviet/Russian policy in the Middle East. Special attention will be given to new patterns of international relations in the Middle East in the post-Cold War, post-Gulf War era. Recommended prerequisite: PS 361.

PS 466/566

Politics of East Asia (4)

Analysis of the principal developments and institutions, formal and informal, that shape government and politics in China, Japan, and Korea.

PS 468/568

International Politics of East Asia (4)

Examination of the foreign policy motives, objectives, and systems of the major East Asian states: China, Japan, and Korea. Attention is paid in particular to the political economy of regional and extra-regional relationships.

PS 470/570

Theories of Comparative Politics (4)

Examines the evolution of the theories and methods of comparative politics, addressing both the recent history of the discipline and the current state of its practices. Topics include: the behavioral revolution, political development, the role of state, the new institutionalism, and the state-in-society approaches. Recommended prerequisite: PS 204.

PS 473/573

Democracy and Development in the Caribbean (4)

Examines issues of democracy and development in the Caribbean. It addresses such topics as the impact of the colonial legacy, political culture, political leadership, the state, civil society, social classes, racial politics, level of socio-economic development, transnational structures of power, their relationship to the possibilities of success or failure for democracy in the Caribbean. Course examines specific cases such as Jamaica, Trinidad and Tobago, Guyana, Puerto Rico, and the Dominican Republic. Recommended prerequisite: PS 354 or 353.

PS 474/574

Democracy and Development in Latin America (4)

Examines issues of democracy and development in Latin America. It addresses such topics as the role of history, political culture, political leadership, political institutions, the state, the military, civil society, social classes, level of socio-economic development, and their relationship to the possibilities of success or failure

for democracy in Latin America. The course examines specific cases such as Argentina, Brazil, Mexico, Chile, Peru, Venezuela, and Uruguay. Recommended prerequisite: PS 353.

PS 476/576

Politics, Reggae, and Protest (4)

Examines how social movements from below are able to challenge elite-dominated regimes. Poor people's movements can constrain the cultural and ideological environment in which political parties operate. Course examines the emergence of the Rastafarian movement and its ideological challenge to first the British colonial government in Jamaica, and later the democratically elected governments in independent Jamaica.

PS 479/579

Transitions to Democracy (4)

Comparative analysis of political systems which have experienced a transition from an authoritarian to a democratic regime. Attention is given to the conditions supportive of democratic transition and to the problems of maintaining democratic stability. Recommended prerequisite: PS 204.

PS 482/582

Liberalism and Its Critics (4)

Critical examination of the theory and practice of liberalism as an ongoing tradition. The basic elements of liberalism are identified and discussed and criticisms of the liberal tradition, as offered by communitarians, classical republicans, feminists, and postmodernists, are examined. Liberal responses to these criticisms are also explored. Recommended prerequisite: PS 381.

PS 483/583

Justice in the Modern World (4)

Critical analysis of the nature and meaning of social justice. Special attention is given to liberal theories of justice, questions of distributive justice, justice and the rule of law, inter-generational justice, and political alternatives to the liberal vision of social justice. Recommended prerequisite: PS 381.

PS 486/586

American Political Thought: 1600 to 1820 (4)

The development from 1600 to 1820 of American political thought about government and its proper relation to the individual and society. Specific topics considered include the English background; the colonial mind; ideas informing the revolution; the creation of the Constitution; and the ratification debates; the Jeffersonian and Hamiltonian conflict; John Marshall and the expansion of national power. Attention given to bringing to the surface the fundamental, often inarticulate, patterns, and presuppositions of American thought about political things.

PS 487/587

American Political Culture: 1820 to the Present (4)

The development from 1820 to the present of American political thought about government and its proper relation to life, liberty, property and the pursuit of happiness. Topics considered include democratization and the Jacksonian period, slavery, and the nature of the Union, Social Darwinism and industrialization, the progressive period, the coming of the welfare state, and contemporary concerns.

Attention given to bringing to the surface the fundamental, often inarticulate, patterns, and presuppositions of American thought about political things.

PS 493/593

Philosophy of the Social Sciences (4)

An analysis of the central problems associated with the idea of a "science of society" to a "science of politics." The philosophical foundations of empirical social science are critically examined and discussed along with the foundations of interpretive social science, critical social science, feminism, post modernism, and rational choice theory. Recommended prerequisite: PS 381.

PS 495/595

Research Methods for Political Science (4)

Introduction to an examination of methodological issues and statistical techniques for empirical political research. Major topics include but are not limited to issues in designing political research, survey research, the role of hypothesis testing, and the major statistical tools commonly employed in empirical political analysis. Recommended prerequisites: Mth 243, 244.

PS 503

Thesis (Credit to be arranged.)

Pass/no pass option.

PS 530

Proseminar in International Relations (4)

Graduate seminar surveys the main theoretical and analytical approaches encountered in the study of international relations. Themes include the grand theoretical traditions of liberalism, realism, and radicalism; analytical and methodological perspectives, like behavioralism and rational choice theory; as well as the normative, critical, and postmodern challenges to the mainstream.

***PS 543/PAP 643**

Resolving International Conflicts (4)

A seminar that explores different kinds of international disputes and actual conflicts in order to identify and assess theories, analytical frameworks, and methods of conflict resolution, management, and prevention. Emphasis is on understanding the roots of conflicts and techniques that may be appropriate to different levels and dimensions of conflict.

PS 545/PAP 645

American Foreign Policy (4)

Contemporary foreign relations of the United States; objectives, world, and domestic factors affecting American foreign policy; governmental institutions concerned with development and execution of foreign policy; major issues and problems.

PS 556

Advanced Political Economy (3)

Readings seminar provides a review of the literature in theories and selected issues in international political economy. Core requirement for graduate students in the PAP doctoral program and for master's students in political science who select international relations as their primary field of specialization.

PS 557

Policy Topics in Advanced Political Economy (4)

This readings seminar provides a review of the literature in theories and selected issues in international political economy. Core requirement for graduate students in the PAP doctoral program

and for masters students in political science who select international relations as their primary field of specialization.

PS 559

Political and Economic Decision-making (3)

Examines the philosophical and conceptual assumptions embodied in alternative decision-making theories in the fields of economics and politics. Designed to show students the differences in individual and collective decision-making processes and the technical and social challenges faced in decision-making processes in the market place and the realm of politics. Examples cover local, national, and international policy topics. Recommended prerequisite: USP 515/615. This course is the same as USP 636; can only be taken once for credit.

Public Administration

650 Urban Center

503-725-3920

www.hatfieldschool.pdx.edu/PA/pub_adm.php

Minor in Civic Leadership

M.P.A.

M.P.A.: Health Administration

M.P.H.—Participating Division in Oregon

Master of Public Health Program

Ph.D.—Lead Division in Public

Administration and Policy Doctoral Program

The Division of Public Administration offers a variety of programs to meet the educational needs of public service professionals. Mid-career managers and those intending such careers in federal, state, and local government; not-for profit agencies; and hospitals and other health care organizations are attracted to both undergraduate and graduate programs offered by the division because of the quality of the faculty, the reputation of the programs, and the convenience of course scheduling. In addition to its own faculty and course offerings, the Division of Public Administration draws faculty and courses from other departments and schools, such as political science, economics, criminology and criminal justice, urban studies and planning, gerontology, and community health. Adjunct faculty with appropriate academic credentials and significant professional experience in government, non-profit, and health organizations also contribute to the division.

The Division of Public Administration admits students with undergraduate degrees in a variety of social sciences, as well as in business, the humanities, and sciences. It accepts both full- and part-

time students, who have had substantial governmental and nonprofit experience, and who have little or no professional experience. To accommodate students who are currently working, the division offers sections of all required courses in the evenings or late afternoons or in intensive weekend formats.

Accreditation. The Master of Public Administration and the Master of Public Administration: Health Administration degrees are accredited by the National Association of Schools of Public Affairs and Administration. The Master of Public Health degree is accredited by the Council on Education for Public Health.

Cooperative degree program in public health. The Division of Public Administration, along with the School of Community Health, College of Urban and Public Affairs at Portland State University, collaborates with the Oregon Health & Science University and Oregon State University in offering the Oregon Master of Public Health degree. Coursework can be taken at any one of the participating institutions. The three universities jointly administer the M.P.H. degree program.

Doctoral students. See the graduate program under the Hatfield School of Government on page 314 for details on the Doctor of Philosophy in public administration and policy.

Graduate programs

Admission requirements

In determining admission to the Division of Public Administration, the faculty assesses the applicant's preparation for and commitment to the unique demands of a public service career. It considers the following:

1. The appropriateness and quality of academic preparation demonstrated by the breadth and content of prior academic coursework. A minimum GPA of 3.00 in undergraduate coursework is generally expected of students seeking regular admission status.
2. Three independent assessments of the applicant's ability to perform adequately in graduate studies and potential for high-level performance in public service. The three letters of assessment, on forms provided by the Division of Public Administration, should be provided by faculty members from colleges or universities previously attended or by other persons in a position to comment on the applicant's

academic background and professional experience. One letter should be from the applicant's current employer, if any.

3. A résumé of professional work experience, if any.

4. A 500-word statement concerning the applicant's professional goals and how the specific master's degree relates to the achievement of his or her goals. This statement should indicate whether the student plans to participate in the program on a full- or part-time basis and when program requirements are expected to be completed.

5. A TOEFL score of 550 on paper or 213 electronic is required of every applicant whose first language is not English. This is a requirement even if the applicant has earned an undergraduate degree in the United States.

6. In addition to the above, the Master of Public Health (M.P.H.) degree requires completion of an undergraduate course in statistics and submission of GRE scores.

The Division of Public Administration maintains the same application deadlines published for the University. Admission is open fall, winter, and spring terms, and Summer Session.

Limitation on by-arrangement courses.

Admitted Ph.D. and master's students may utilize no more than 12 credits of by-arrangement classes (501/601 and 505/605). In cases where more than 12 credits are needed because of the lack of regularly scheduled classes, a waiver must be submitted for approval to the division curriculum committee and the division chair.

Limitation on acceptance of C grades.

No student may use more than two C grades toward graduation for a degree in the Division of Public Administration.

Degree requirements

Requirements for minor. The interdisciplinary Minor in Civic Leadership is collaboratively designed by several units at PSU. The minor provides students with theoretical and practical understanding on civic leadership, and prepares students to be responsibly engaged citizens. To earn a minor in civic leadership, a student must complete 27 course credits. Courses must include PA 311 Introduction and USP 407 Seminar for Civic Leadership. A pre-approved 6-credit community-based civic leadership practicum is also required. The practicum requirement may be fulfilled by either a pre-approved capstone or by an independently developed community-based learning experience.

Credits

Required courses

PA 311 Introduction to Civic Leadership 4

†USP 407 Integrative Seminar
for Civic Leadership 4

Electives.....20

CR 410 Intro to Non-Violence (4)

Eng 308 The Immigrant Experience (4)

EPFA 410 School/Community Relations (4)

EPFA 410 Spiritual Leadership (4)

MS 311 Leading Small Organizations (4)

PA 411 Theoretical Foundations of
Citizenship and Community Leadership (4)

PA 410 Civic Engagement:
The Role of Individuals (4)

PA 410 Civic Engagement:
The Role of Social Institutions (4)

PA 412 Civic Engagement:
The Role of Governing Institutions (4)

PA 417 Ethical Leadership and Public Service (4)

PHE 365 Health Promotion Programs
for Children and Youth (4)

PS 312 Legislative Process (4)

PS 417 Interest Groups (4)

PS 431 State and Local Politics (4)

Sci 347 Science, Gender and Social Context (4)

Sci 331 Atmospheric Interactions:
Urban Air Pollution (4)

Soc 423 Stratification (4)

Sp 220 Public Speaking (4)

Sp 313 Communication in Groups (4)

Sp 415 Problems in Intercultural
Communication (4)

USP 410 Leadership for Sustainable
Communities (4)

USP 450 Concepts of Citizen Participation (4)

Five courses from approved list

†Community-based practicum..... 6

Six credit community-based civic leadership
practicum, either through participation in an
approved capstone, or through an independ-
ently developed community-based learning
experience.

M.P.A.

Credits

Substantive core

PA 511 Public Administration 3

†PA 513 Administrative Ethics and Values 3

PA 533 Public Policy: Origins and Processes 3

PA 534 Administrative Law
and Policy Implementation 3

†PA 540 Administrative Theory and Behavior 3

PA 551 Analytic Methods
in Public Administration I 3

PA 552 Analytic Methods
in Public Administration II 3

PA 582 Public Budgeting 3

PA 585 Financial Management
in the Public Sector 3
(or economics course approved by adviser)

PA 590 Human Resource Management
in the Public Sector..... 3

Skill development.....9

Three of the following:

PA 532 Organization and Methods (3)
(Prerequisite: PA 540)

PA 536 Strategic Planning (3)

PA 545 Organization Development (3)
(Prerequisite: PA 540)

PA 547 Interpersonal Communications
in the Public Sector (3)

PA 548 Advocacy in the Public Sector (3)

PA 549 Intercultural Communications
in the Public Sector (3)

PA 550 Managing Information Resources (3)

PA 555 Program Evaluation and Management
(3)

PA 557 Operations Research in Public
Management (3)

† Prerequisite: PA 311
‡ Prerequisite: PA 511

Other courses not listed but appropriate to the educational goals of the student may be selected with consent of adviser.

Integrative experience 6

The integrative experience is offered under two options and is available to students only after they have completed at least 42 credits in their master's program.

Option 1 is intended for students who have had limited or no administrative experience. Option 1: PA 509, Organizational Experience (6). Pass/no pass only.

or

Option 2 is for those students who have had at least three years of full-time administrative or management experience in public, non-profit, and/or health care organizations. Option 2: PA 512, Reflective Practice and Case Analysis (3), plus an elective (3) approved by adviser.

Field of specialization 15

Specialty areas and courses must be approved by the student's adviser. The Division of Public Administration offers specialty areas and courses in:

Public sector human resource management and labor relations. The Division of Public Administration offers an integrated concentration of course offerings for students desiring to emphasize personnel administration, public sector labor relations, and the management of human resources. Course offerings include Human Resource Management in the Public Sector; Discrimination Law; Affirmative Action; Public Sector Collective Bargaining: The Legal Framework; Public Sector Collective Bargaining: Negotiations and Impasse Resolution; Public Sector Collective Bargaining: Administering the Agreement; and Labor Law.

Nonprofit management. For students interested in the operation of nonprofit organizations, the Division of Public Administration offers a substantial specialty and number of courses in the management of nonprofit organizations. Course offerings include: Introduction to Nonprofit Management, History and Foundations of the Nonprofit Sector, Grantwriting for Nonprofits, Nonprofit Accounting, Managing Nonprofit Boards of Directors, Financial Management of Nonprofits, and Strategic Planning for Nonprofits.

Natural resources policy and administration. The Division also offers a new concentration and course offerings in the area of natural resources and the environment. The emphasis is on policy and administration. Courses include: Natural Resources Policy and Administration, Water Resources Policy and Administration, Energy Resources Policy and Administration, and other specialty offerings in natural resources.

Health policy and administration. The Division offers a broad specialty area in health policy and administration which gives students the needed conceptual and technical skills in health administration for hospitals, health systems, health maintenance organizations, and health-related governmental organizations. Course offerings are available in health policy and administration, health economics, and financial management. Requirements for the specialty health degrees (M.P.A.: HA and M.P.H.) are indicated below.

Specialty areas may also be selected from other departments or divisions within the University and may be put together as multi-disciplinary endeavors in consultation with adviser.

Other specialty areas. Courses for a specialty in Criminology and Criminal Justice are provided by the Criminology and Criminal Justice Division. In addition, the Division of Public Administration is developing specialty areas in Public Policy and in Budgeting and Financial Management.

Total 60

MASTER OF PUBLIC ADMINISTRATION: HEALTH ADMINISTRATION

The Division of Public Administration offers a Master of Public Administration: Health Administration degree. Students

admitted to this degree are required to complete 60 credits of coursework.

For students interested in geriatrics, gerontology, and the administration of aging programs, the Institute of Aging provides a Graduate Certificate in Gerontology, which may be earned in conjunction with the M.P.A.: H.A. degree.

Credits

Substantive core

PA 511 Public Administration 3

PA 513 Administrative Ethics and Values
or PA 573 Values and Ethics in Health 3

†PA 540 Administrative Theory and Behavior
or PA 541 Organizational Behavior in Health 3

PA 533 Public Policy: Origins and Processes 3

PA 534 Administrative Law and Policy
Implementation 3

PA 551 Analytic Methods in Public
Administration I 3

†PA 552 Analytic Methods in Public
Administration II 3

PA 582 Public Budgeting 3

PA 586 Introduction to Health Economics 3

PA 590 Human Resource Management
in the Public Sector 3

Skill development 9

Three of the following:

PA 545 Organization Development (3)
(Prerequisite: PA 540)

PA 576 Strategic Management in Health
Organizations (3) or

PA 536 Strategic Planning (3)

PA 579 Health Care Information Systems
Management (3) or PA 550 Managing
Information Systems (3)

PA 588 Program Evaluation and Management in
Health Services (3) or PA 555 Program Evaluation
and Management (3)

Substitutions of other skill development courses
offered by the Division of Public Administration
are allowed with consent of adviser.

Integrative experience 6

The integrative experience is offered under two options and is available to students only after they have completed at least 42 credits in their master's program.

Option 1 is intended for students, who have had limited or no administrative experience. Option 1: PA 509, Organizational Experience (6).

or

Option 2 is for students who have had at least three years of full-time administrative or management experience in public, non-profit, and/or health care organizations. Option 2: PA 512, Reflective Practice and Case Analysis (3), plus an elective (3) approved by adviser.

Field of specialization 15

Core Specialization Courses (6)

PA 570 Health Administration (3)

PA 571 Health Policy (3)

Three courses selected from the following (9):

PA 574 Health Systems Organization (3)

PA 577 Health Care Law and Regulation (3)

PA 578 Continual Improvement in Health Care (3)

PA 587 Financial Management
in Health Services (3)

PA 589 Research Methods in Health Services (3)

Other health-related courses not listed may be
selected in consultation with the adviser.

Total credits: 60

MASTER OF PUBLIC HEALTH: HEALTH MANAGEMENT AND POLICY

The Division of Public Administration offers the Master of Public Health degree with a specialty in health management and policy as part of the Oregon M.P.H. offered

by Portland State University, Oregon State University and Oregon Health & Science University. Students admitted to the health management and policy track of the M.P.H. degree are required to complete 61 hours of coursework. Instruction is provided at Portland State University and Oregon Health & Science University.

Credits

Core courses	15
PHE 535 Epidemiology Survey (3)	
†PH 525 Introduction to Biostatistics (4)	
PHE 580 Concepts of Environmental Health (3)	
PHE 512 Principles of Health Behavior (3)	
PA 574 Health Systems Organization (3)	
Health administration and policy required concentration	
PA 541 Organizational Behavior in Health Services Organizations	3
PA 571 Health Policy.....	3
PA 573 Values and Ethics in Health.....	3
PA 576 Strategic Management in Health Organizations	3
PA 586 Introduction to Health Economics	3
12 credits from the following	12
PA 544 Leadership and Governance in Health (3)	
PA 575 Advanced Health Policy (3)	
PA 577 Health Care Law and Regulation (3)	
PA 578 Continual Improvement in Health Care (3)	
PA 579 Health Care Information Systems Management (3)	
PA 587 Financial Management of Health Services (3)	
PA 588 Program Evaluation and Management in Health Services (3)	
PA 589 Research Methods in Health Services (3)	
Electives.....	12
In consultation with his or her adviser, the student selects elective credits from appropriate course offerings of the participating universities. Elective courses may be selected to reflect an area of special interest. The choice of elective courses should relate to the broad discipline of public health and its supporting disciplines.	
Field work	
PA 509 Organizational Experience.....	6
Total	61

Doctor in Philosophy in public administration and policy. The Division of Public Administration cooperates with other units within the College of Urban and Public Affairs to offer a doctoral degree in public administration and policy. For details, see the program description on page 314.

Courses

Courses with an asterisk (*) are not offered every year.

PA311

Introduction to Civic Leadership (4)

Students will examine leadership in democratic societies, the ways in which people put concepts of civic responsibility into practice, and the challenges of community-building and leadership development in the context of our evolving democratic society. Students will explore leadership through various perspectives, including diversity, individualism, trust, and participation. A central goal of this course

is to help prepare students for a lifetime of responsible citizenship and civic engagement.

PA 411 Foundations of Citizenship and Community Leadership (4)

Examines theories of citizenship within the democratic tradition, with a special focus on the roles of citizens in the policy implementation process within their local communities. This focus will be examined against the backdrop of the history and tradition of citizenship within the American context. The course builds a definition for community leadership that recognizes the close interface between the role of career administrators as agents of policy implementation and the role of citizens as active stewards of the public good. Recommended prerequisite: upper-division standing or completion of PS 101, 102 or UnSt Leadership for Change Sophomore Inquiry course.

PA 412 Civic Engagement: The Role of Governing Institutions (4)

This course develops understanding of how local governments carry out their governance responsibilities and the roles they play within the larger scheme of the American democratic system. The goal is to assess how the structures and processes of local governments affect opportunities for democratic accountability, citizen participation, the development of civic capacity, citizenship and civic leadership.

PA 417 Ethical Leadership (4)

Explores the ethical conflicts faced by public officials, both elected and career civil servants. The goal of the course is to provide students with ethical leadership models that will enable them to judge the appropriateness of ethical compromises that put personal, professional, organizational, and public service values into conflict with one another. The course will rely on case problems and presentations by public officials who have faced these kinds of conflicts during their careers. Recommended prerequisite: upper-division standing or completion of one of the following: Phl 202, PS 101, PS 102, or UnSt Leadership for Change Sophomore Inquiry course.

PA 501 Research (Credit to be arranged.)

PA 504 Cooperative Education/Internship (Credit to be arranged.)

PA 505 Reading and Conference (Credit to be arranged.)

PA 507 Seminar (Credit to be arranged.)

PA 508 Workshop (Credit to be arranged.)

PA 509 Organizational Experience (6)

This course is the final integrative experience and is required for all M.P.A. and M.P.A.:HA students, who have limited or no administrative experience, and for all M.P.H.:HMP students regardless of experience. The student completes a field experience with an appropriate agency, culminating in a project report systematically analyzing an administrative problem that is both instructive to the student and of importance to the agency. Students are

required to attend an orientation seminar to aid them in planning how the field experience will integrate with their coursework and their career goals, and to cultivate the habit of reflective practice. PA 509 may only be taken after students have earned at least 42 credits in their program of study.

PA 510 Selected Topics (Credit to be arranged.)

PA 511 Public Administration (3)

The role of administration in a democratic society. The course surveys the field, the development of the profession and practices in public administration, and examines the legal, historical, economic, and political foundations of the American governmental and nonprofit traditions.

PA 512 Reflective Practice and Case Analysis (3)

This course is designed to provide mid-career students with administrative experience an opportunity to develop skills in the areas of reflective practice, administrative problem solving, consulting, and coaching. Students will be required to present a case problem they developed as the basis of an exercise in administrative problem solving and coaching for their fellow students. Prerequisites: at least three years of full-time administrative or management experience in a public, nonprofit and/or health-care organization and 42 hours of completed coursework toward the degree.

PA 513 Administrative Ethics and Values (3)

Explores values, ethics, and morality in public sector administration. It considers such concepts and issues as the following: personal and professional values and roles; the myth of value neutrality; the public interest; values, ethics, and change; value trade-offs; ethical ambiguities; ethical codes, fiscal ethics, and ethics and administrative discretion.

PA 515 Public Works Administration (3)

A general overview of administrative practices in public works, including an evaluation of organizational practices, project management, and relationships to political processes. The course will consider actual problems in the administration of public works.

PA 516 Current Issues in Public Management (3)

Explores two major strategies for the reform of public organizations: (1) an economic-centered approach that emphasizes private market-place incentives and the measurement of outcomes and (2) a civic dialogue approach that advocates the use of deliberative processes, reliance on collaboration, and a greater role of nonprofit organizations in the design and delivery of public services. The purpose of this course is to examine these approaches within the context of traditional models that have guided the public policy and management role of the bureaucracy in the American system of democratic governance.

PA 517 Leadership Development for Public Organizations (3)

Course focuses on two activities: (1) use of assessment instruments to prepare individual leadership profiles and (2) an examination of

†OHHS courses

various leadership theories with applications to specific leadership situations. The goal of the course is to assist participants in understanding their own individual leadership styles and capacities and to better appreciate what is required to successfully lead at an individual, team/group, organizational, and larger community level.

**PA 518
Leading Public Organizations (3)**

Course seeks to develop an understanding of the essential ingredients of leading public organizations, including creating a vision, developing support for the vision, and transforming the vision into an organizational legacy. It focuses on the distinctive role responsibilities of the leader as an agent of the organization within the larger community setting, thus distinguishing the course from other leadership classes that focus on either an individual or organizational perspective. As part of this larger external focus, participants acquire the knowledge and skills to undertake inter-jurisdictional and strategic planning, conflict management, to work with the media, and to develop and implement collaborative agreements.

**PA 519/619
Civic Capacity (3)**

Examines the factors that contribute to the capacity of communities to create social agreement and to sustain collective action over time. Provides students with an opportunity to evaluate current research on the factors that contribute to the development of social capital and to apply this research to field-based community building activities.

**PA 520
Introduction to Nonprofit Management (3)**

Introduces students to a wide range of management needs, problems, and issues of not-for-profit organizations. It considers such items as the following: the executive director as manager; aspects of governance; volunteer/staff relations; personnel administration; budgeting and financial management; fund raising and sources of revenue; long-range planning; and community organization.

**PA 521
History And Foundations
of the Nonprofit Sector (3)**

Provides an introduction to the history and development of the private, nonprofit sector in the United States. It explores theories and concepts that describe the social, political, legal, and economic meaning of volunteerism, philanthropy, and the nonprofit sector as a sector separate from government and business. It provides a specific focus on the relationship of nonprofit to government in the delivery of public services within the context of a welfare state.

**PA 522
Governance of Nonprofit Organizations (3)**

Addresses the history and functions of boards in the nonprofit sector, including an examination of the roles of boards in governance and leadership; policy and administration; decision-making processes; board-staff relations; resource development; board composition and recruitment; ethics and liability; and current research on boards and organizational effectiveness.

**PA 524
Financial Management
in Nonprofit Organizations (3)**

Designed to provide participants without formal accounting or finance training with the conceptual framework and practical tools needed to provide strong fiscal management and fiscal leadership in the nonprofit environment. For students with formal finance and/or accounting background, the course will provide opportunities to compare and contrast fiscal management objectives and functions in nonprofit with those found in for profit and/or governmental entities. It is structured to illustrate the nonprofit fiscal management cycle: planning, execution, recording, reporting, and monitoring.

**PA 525
Grantwriting for Nonprofit Organizations
(3)**

The process of grant acquisition, beginning with the formulation of a fundable idea and concluding in an application and its review. Students are expected to identify potential funding sources, initiate inquiries, and develop an application for funds to support a program or study of special interest. The steps in this process are discussed in general terms and in the context of each student's application. The focus is the development of grants from private rather than public funders.

**PA 526
Fundamentals of Fundraising in Nonprofit
Organizations (3)**

Creating an environment for successful fund development within a nonprofit organization is a serious undertaking that requires a substantive understanding of, and experience with, development programs and fundraising practices. Course provides the learner with the basic theories, principles, and techniques for fund development.

**PA 528
Organizational Leadership and Decision
Making in Nonprofit Organizations (3)**

Introduces students to the theory and practice of leadership and decision-making in the nonprofit sector. It focuses on the relationship of leadership to management, governance, and organizational effectiveness of nonprofit organizations. It covers classic, modern, and contemporary theories of leadership, including trait, style, situational, contingency, charismatic, transactional, transformational, team, and contemporary approaches to leadership and decision-making.

**PA 529
Nonprofit Field Study
in Oaxaca, Mexico (3 or 6)**

An intensive immersion program in Oaxaca, Mexico, offered by the Institute for Nonprofit Management in the Hatfield School of Government. Course includes nonprofit field study and site visits, cultural immersion homestays, and visits to cultural sites. The program varies from year to year in the types of non-governmental nonprofit organizations the students visit, based in part on the interests of the students who register. Site visits in recent years have included programs for juvenile offenders and gang members, human rights advocacy groups, medical clinics, an AIDS education program, and a coalition of environmental groups. On-site translation is provided so that proficiency in Spanish is not necessary, but Spanish lan-

guage study is part of the immersion experience.

**PA 532
Organization and Methods (3)**

Designed to familiarize students with the substance and range of work performed by management analysts in the public sector, commonly referred to as organization and methods. Emphasis will be on developing skills and the ability to conduct management analysis studies. Specific content will include: conducting reorganization studies; work measurement and productivity analysis; procedures analysis; forms control; management by objectives; management information systems. Prerequisite: PA 540.

**PA 533
Public Policy: Origins and Process (3)**

Drawing on the general concept of the policy cycle, this course explores the central actors, processes, and issues associated with the formation of public policy. The course gives particular weight to interaction among the three branches of government, interest groups, and the private sector. Tensions between technocratic and political approaches to policy development also receive attention, as do intergovernmental concerns.

**PA 534
Administrative Law and Policy
Implementation (3)**

When policies receive the formal status of laws, they acquire a special significance for the executive and judicial branches. This course examines the process of policy implementation through the use of administrative discretion and the rule-making process. Delegation of legislative power, judicial review, informal adjudication, and the role of the administrative law judge are emphasized. The limits of discretionary authority are explored. Students address the theoretical, practical, and ethical issues in implementation, giving particular attention to the relationship between stated goals and actual outcomes.

**PA 535
Administrative Law and Regulation (3)**

The constitutional basis for administrative law; the Administrative Procedures Act; promulgating regulations: notice, hearings and reasoning processes; practical problems in rule making; administrative adjudication: discovery, hearings, and decisions; informal administrative decisions: fairness vs. efficiency; technical law: jurisdiction, standing, rightness, court procedures; designing administrative procedures to reach good decisions quickly with reasonable resources; freedom of information; current administrative law problems.

**PA 536
Strategic Planning (3)**

Provides an overview of the application of planning systems to public sector functions and explores newer "stakeholder" theories of planning, planning models, and the step-by-step process for initiating and engaging in strategic planning processes at various levels of government. Through the use of case studies and hands-on exercises, students are exposed to practical applications of strategic planning approaches and techniques.

**PA 539
National Policy Process (3)**

As a seminar in public administration, the National Policy Process is studied on-site in

Washington, D.C. Attention is paid to the actors and the action of policy process, to the institutionalization of that process, and to the administrative components of that process. Meetings are arranged with key policy actors in appropriate organizations including the Office of Management and Budget, Congressional staff, lobbyists and think tanks, the General Accounting Office, regulatory boards, and various agencies. A current piece of legislation or set of legislative initiatives is used as a case study throughout the week.

PA 540

Administrative Theory and Behavior (3)

Managing organizational systems to accomplish purposeful outcomes. Attention is given to how formal structures and informal processes influence organizational goals in public and nonprofit environments. This includes theories of organizational, group, and individual behavior, such as organizational design, power and authority, leadership, teamwork, communications, work design, and motivation. Emphasis is on managers and managing in public purpose organizations by reviewing major theories and their application and effective use.

PA 541

Organizational Behavior in Health Service Organizations (3)

Provides an overview of organizational theory and behavior in health services organizations. Emphasis is on developing an understanding of the factors and forces which influence the organization, behavior, and operations of health services delivery organizations through consideration of organizations, their environments, and the roles of individuals working in management.

PA 543

Creating Collaborative Communities (3)

Collaboration is perceived as an important method for addressing complex community issues through alliances with other organizations in the nonprofit, for-profit, and government organizations. This course introduces students to the theory and practice of collaboration through in-class and "living" case studies in the community. Students will learn the success factors, barriers to, and preconditions of collaboration at the intraorganizational, interorganizational, and intersectoral levels. They will explore the potential for using collaboration in a variety of community settings.

PA 544

Leadership and Governance in Health Services (3)

Class explores principles and practices of leadership and governance in a variety of health and human services organizations. Theories of leadership and models of governance are studied, and explored through case studies of local health and human services leaders and their governance relationships. Students also conduct self-assessments of present and future leadership practice and potential.

PA 545

Organizational Development (3)

A consideration of organization development as a strategy for organizational change. This course emphasizes concepts and methodologies relating to organizational problem diagnosis, action research, planned change, change implementation and evaluation, and the devel-

opment of appropriate interpersonal competencies and skills. Focuses on the public manager as change agent.

PA 546

Supervision in the Public Sector (3)

Focuses on the role of the supervisor in contemporary public and nonprofit organizations and the knowledge, skills, and abilities needed to effectively perform this role. Among the topics considered are the ethics and values of supervision; work planning; delegating, motivating, and empowering; communicating effectively; developing a team; coping with conflict; monitoring and evaluating performance; and dealing with the boss(es).

PA 547

Interpersonal Communications in the Public Sector (3)

Explores the theory and practice of human communication in an organizational context. Special emphasis will be placed on theories of task-group communication, interpersonal conflict resolution and cross-value (intercultural, interethnic) communication. Various exercises will emphasize skills in verbal presentation, group communications, and interpersonal communication in the context of status, cultural, ethnic, and gender differences.

PA 548

Advocacy Roles in Public Management (3)

Explores the skills of advocacy as they relate to the duties of the public administrator. The basic principles of argumentative procedure are emphasized with a focus on oral advocacy, briefing arguments, and conducting public hearings. Videotape will be used to help develop the oral communication skills of the advocate.

PA 549

Crosscultural Communication in the Public Sector (3)

An examination of intercultural communication aspects, processes, and scenarios occurring in public sector interactions. Emphasis on external-client/constituent relationships. Development of intercultural awareness is a key goal introduced through class discussion, scenario investigation, and research projects. The course is highly interactive with class discussion required.

PA 550

Managing Information Resources (3)

Considers information management and computer information systems as they affect public management and public policy. Basic concepts are covered, and emphasis is placed on the use of computerized information technologies as management tools for public sector administrators. Substantial use is made of case studies to highlight how the public sector manager may most appropriately and effectively use computer resources and avoid inappropriate and misleading use of these resources.

PA 551

Analytic Methods in Public Administration I (3)

Topics to be covered include: research design, sampling methods and theory, data collection, techniques of data analysis and presentation, statistical reasoning, and computer applications for statistical analysis.

PA 552

Analytic Methods in Public Administration II (3)

A continuation and expansion of topics covered in PA 551, focusing on analytic methods used in research and evaluation of public sector policies, systems, and programs. Topics to be covered may include: qualitative and quantitative applications in research design and data collection; statistical modeling, forecasting, program evaluation, and other areas of applied research. Prerequisite: PA 551.

PA 554

Policy Analysis Research (3)

Course requires student to become proficient in the use of reference tools for successfully undertaking policy research. Students are required to identify a policy issue and to use library and on-line resources to track a piece of public policy through the stages of agenda-setting, legislative policy-making, administrative implementation, court adjudication, and follow-up analysis and evaluation of consequences. The course consists of a series of on-line exercises corresponding to each stage of the policy development and implementation process. The exercises are supplemented with discussion and lectures.

PA 555

Program Evaluation and Management (3)

Examines program evaluation from the perspective of the public administrator. Covers the major approaches, methods, and concepts in the field of program evaluation. Topics include impact assessment, research design, qualitative evaluation methods, performance auditing, benefit-cost analysis, and other selected topics.

PA 557

Operations Research in Public Administration (3)

Addresses the need for today's public administrators to have some understanding of the increasingly important tools of management science and operations research. It has no prerequisite: quantitative or technical background is not required. A variety of topics will be covered, with some flexibility in choice of topics according to students' interest. Topics include: linear programming, queuing, simulation, decision analysis, forecasting, PERT/CPM, inventory analysis, and replacement analysis. Methods taught in the course will be in the context of public administration.

PA 563

Citizens and Administration (3)

This course analyzes modern civic life and its challenges. Its major focus is the often ambiguous relationship between citizens and administrators in the political system. Other topics emphasized are: transformation of civic life in modern times, declining citizen trust in government, modern approaches to citizen participation in government, and the future of "civism" in the United States.

PA 564

Current Issues in Environmental Policy and Administration (3)

Provides in-depth analysis of evolving issues in environmental and natural resources policy and administration. Topics for analysis vary from term-to-term. Examples of topics include: political approaches to sustainable development, issues in water and land, urban natural

resource management, hazardous materials issues, the politics and policy of dams and dam removals, issues of governance in the Columbia River Basin, new models of environmental management. Noted practitioners from the region, senior administrators and advocates are frequent guest presenters in the class. Issues are developed and explored through multiple perspectives in the spirit of liberal education and professional development. The course meets the needs of advanced students, professionals in the community, and others with particular interest in current issues.

**PA 565
Natural Resource Policy
and Administration (3)**

Reviews the history, politics, and institutions related to current environmental and natural resource policy and its administration. Reviews policy domains like land and forest, water, energy, fish and wildlife, and environmental quality. Special attention is paid to policy and administrative governance issues like sustaining common pool goods, structuring intergovernmental relations, and evaluating policy implementation strategies of direct production, planning, regulation, and changing market incentives. A central premise is that natural resource administrators face a policy arena that is intrinsically problematic because of the dynamic nature of social values about natural resources, the long time horizon implicit in resource systems, the broadening geographic scale considered in natural resources decisions, and the interdependency of social and ecological communities. Recommended as a first course in the environmental and natural resource administration specialization.

**PA 566
Water Resources Policy
and Administration (3)**

Reviews the history, politics, and institutions related to current water policy and administration in the United States. Examines policy history leading to present institutional and legal arrangements for federal, tribal, regional, state, and local water quality and quantity decision making. Attention is given to the industrial development of the East and created water resources of the arid West as a way to understand changing social sentiments toward water and water policy. Examines the evolution of purpose in pollution laws from human health protection to include ecosystem health protection and explores implementation of such protection through "watershed" approaches to land use and water quality management by NGOs, and federal, state, and local government. A major theme is the problem of developing coherent water policies in a policy arena which has divided authority, plural traditions, and multiple resource and social issues.

**PA 567
Energy Resources Policy
and Administration (3)**

Reviews the history, politics, and institutions related to current energy policy and administration with particular attention to the Pacific Northwest and development of hydroelectric power. National energy policy history is reviewed including political, financial, and environmental problems. Explores the roles of interest groups; state, local, national, and interna-

tional governments; and regional governing institutions. It explores the changing distribution of social costs and benefits as both a cause and result of policy change. Passage of the 1980 Northwest Power Act, the Northwest Power Planning Council created in the act, and the implementation of the act will be studied, as will current issues like energy conservation, regional power planning, deregulation and the status of institutions involved in energy policy, and Columbia basin fish and wildlife conservation.

**PA 568
Forest Policy and Administration (3)**

Reviews the history, politics, and institutions related to forest resource policy and management. Focuses on how policy affecting public and private forest land is made and implemented. Case studies, largely from the northwestern United States, are used to examine these processes. History, laws, and programs relating to forest land ownership, public and private forest management, and associated environmental protection are studied at the federal and state levels. Special attention is given to understanding how public values about forests develop, and how public values affect public policy related to forests held by public, nonprofit, industrial, and private owners.

**PA 569
Fish and Wildlife Policy
and Administration (3)**

Reviews the history, politics, and institutions related to fish and wildlife policy and administration. Focuses on how policy affecting fish and wildlife is made and implemented. Case studies, largely from the northwestern United States, are used to examine these processes. Policy history is studied at the state and federal level with particular attention to the federalization of authority in this arena and the role of interest groups in policymaking and implementation. Current issues like endangered species, the role of tribes, bio-diversity conservation, and inter-jurisdictional management of fish and wildlife are the focus of study.

**PA 570
Health Administration (3)**

An examination of issues related to the administration of health care systems. Topics include: changing patterns of health care, budget and financial management techniques, and political influences on health administration.

**PA 571
Health Policy (3)**

Centers on an investigation of the public policy process as it affects the health care field. Specific health care policies and programs are used to explore the characteristics of the health care policy process and the factors involved in the formulation, implementation, and evaluation of health care policies and programs.

**PA 572
Health Politics (3)**

This course is designed to survey the interworkings of health care legislation. By examining the nuts and bolts of health law development, a better understanding of health policy development within the context of the political system can be realized. Health legislation is examined in terms of historical analysis and the legislative process, including the role of interest groups, the use of information in the political system, the role of bureaucracy, and the budget process.

**PA 573
Values and Ethics in Health (3)**

Explores a number of issues and questions in health care, including the following: conflicting and competing values; making choices by policy makers and health care professionals and administrators as to who gets what health services; the conflict between money and profits and the concept that all people within the American democratic system are entitled to at least basic health care.

**PA 574
Health Systems Organization (3)**

Course focus is on the manner in which health care in the United States is organized and administered, as well as the forces which are influencing change in the structure and delivery of health services. Specific topics of analysis and discussion include: structure of the health care system, the providers, health care personnel, financing health care, planning, and evaluation.

**PA 575
Advanced Health Policy (3)**

This course provides students focusing on health policy analysis or advocacy the opportunity to explore specific areas of health policy in-depth. The course is taught as a seminar with students required to select two policy areas, develop readings and questions, and lead class discussion facilitated by the instructor. Coursework emphasizes the understanding, identification and development of successful and sustainable health policy including preparation of four brief, structured policy proposals.

**PA 576
Strategic Management
of Health Care Organizations (3)**

This course provides prospective and current health care managers with the tools necessary to successfully manage their departments/organizations in a strategic manner. Course content will build upon the basic methods of strategic planning and management, with special attention paid addressing and managing the problems and challenges specific to the health care industry.

**PA 577
Health Care Law and Regulation (3)**

Course intended to be an introduction to the American legal system and the laws that affect public health and health care. Initially, course focuses on public legal relationships between governments and individuals, and proceeds to review private legal relationships between individuals or organizations. Reviews the source of laws affecting health care, the basics of constitutional law, the right to privacy, state and federal regulation of health care, and negligence in health care. Wraps up with an introduction to cutting edge health care issues such as health care fraud and abuse compliance and medical record privacy. Prerequisites: PA 571, 574.

**PA 578
Continual Improvement In Health Care (3)**

Intended to introduce students to the concepts of continual improvement and illustrate applications of these concepts in health care. The basic content will be drawn from the industrial quality improvement literature; this will be elaborated through presentation and analysis of health care case studies. Students will gain an

understanding of different approaches to process improvement and quality management and will be prepared to apply this knowledge in the practice setting.

**PA 579
Health Care Information Systems Management (3)**

Two foci: health information systems and health care organization re-engineering. The first focus looks at information systems in health care as clinical care and operational management tools. Included are business needs, the relationship between organizational needs and technology capabilities, and the management and control of IS resources. The focus on health care organization re-engineering includes the role of evolving technologies in development of the community health resource and information needs in the shift from inpatient clinical settings to community provider networks.

**PA 582
Public Budgeting (3)**

Focuses on the major dimensions of public sector budgetary systems. Major emphasis will be devoted to the local budget processes. Topics will include basic concepts of public budgeting, the budget cycle, budget strategy, planning and presentation, alternative budgeting systems, the budget as a political and management tool.

**PA 583
Advanced Budgeting Concepts and Techniques (3)**

Investigates how budgeting can be used to review, analyze, and establish public policy and administrative accountability. Students learn how to: 1) design the best budget system to fit various political environments; 2) review the effectiveness and efficiency of programs through budget analyses; and 3) use the budget to clarify public policy issues and establish management accountability for performance. The mechanics of public budgeting will also be discussed in detail, including developing a budget calendar, making fund balance estimates, balancing revenues and expenditures, and monitoring the approved budget. Students should have practical experience or a previous course in budgeting.

**PA 585
Financial Management in the Public Sector (3)**

An investigation of the sources, methods, and mechanisms available for financing public organizations in a dynamic and complex environment. It includes a consideration of the administrative and behavioral as well as the economic dimensions of financing public organizations. The examination identifies and explores the skills which are appropriate for managing contemporary public finance systems. Among the specific topics considered in this course are the following: tax and nontax sources of revenue; intergovernmental fiscal relations; debt management; productivity; rate analysis; cash flow management; and managing fiscal retrenchment.

**PA 586
Introduction to Health Economics (3)**

Focuses on defining and measuring the performance of the health care sector, defining and explaining microeconomic concepts, and evaluating various policy initiatives to improve efficiency, equity, and technological progress in

health care. Specific topics include description of the health care industry, production of health, measurement of health care price changes, theory of demand for health care, theory of production and cost, measurement of inputs and outputs, cost-benefit and cost-effectiveness analysis, and structure and functioning of markets. In addition, the role of government in a private economy in dealing with market failure is discussed, especially as it relates to the goal of assuring universal access to health care. Does not require any specific preparation in economics or mathematics, although graphical presentation of economic concepts is emphasized.

**PA 587
Financial Management of Health Services (3)**

Focuses on the analysis and administration of resources in the health care field. Among the specific topics included in this course are financial statements, budgeting, cash flow, costing, capital decision making, sources of capital and operating funds, depreciation and government reimbursement schemes, and human resources planning and management. Prerequisites: PA 571, 574.

**PA 588
Program Evaluation and Management in Health Services (3)**

Introduces the theory and practice of program evaluation in the health services system. Includes multiple methods and uses of evaluation from the perspectives of managers, health professionals, and health services researchers, with an emphasis on the utilization of evaluation findings in program planning and management in health services. Course learning will be synthesized through a community-based learning experience involving working with a community partner to develop an evaluation framework and methodology for an existing or proposed health program.

**PA 589
Research Methods in Health Services (3)**

Provides an introduction to traditional methods of designing and conducting health services research. It is intended that at the completion of the course students will understand multiple approaches to health services research, be able to be both participants in and consumers of the research process, and will be competent in conducting critical appraisals of the health services literature and in writing research proposals. Prerequisites: Ph 525, PHE 535.

**PA 590
Human Resource Management in the Public Sector (3)**

Administration and management of human resource systems in public sector and nonprofit organizations. Focus is on the underlying values of human resource management, related public policies, structural patterns, and the functional areas of HRM systems. Specific attention will be directed to the strategic roles of human resource management in day-to-day operations, merit system concepts and practices, position and wage classification systems, methods of securing a qualified labor force, and labor relations. Legal requirements in each of these areas will be examined. Emphasis will be on learning by doing through use of skill-building exercises, simulation and analysis of case materials, review of relevant case law, administrative rule-making,

and current literature. This course serves as a foundation for PA 591.

**PA 591
Policy Issues in Public Human Resource Management (3)**

Provides an in-depth analysis of evolving issues in the management of human resource systems in public sector and nonprofit organizations. Topics for analysis vary from term-to-term. Examples of topics include: the design and implementation of employee performance evaluation programs; determining training needs and planning a programmed response; compensation systems, including problems of wage compression; negotiated wage settlements and other economic benefits related to wages and salaries; employee morale and motivation incentives; and occupational health and safety issues. Noted practitioners from the region are frequent guests of the class. This course is a continuation of material covered in PA 590. Students may take this course without completing PA 590.

**PA 592
Volunteerism and Volunteer Management (3)**

Examines the historical, social, and cultural context of voluntarism in America as a way of understanding who volunteers and why, and what difference it makes in the lives of organizations and communities. The course includes skill development in the management and administration of volunteer programs in a nonprofit organizational context, including volunteer program planning, evaluation of volunteer programs, recruitment, training, and retention of volunteers.

**PA 593
Discrimination Law (3)**

Examines state and federal laws prohibiting discrimination, the major legal theories of proof, the employer's defenses against discrimination charges, the administrative agencies involved, the complaint process, and remedies for violations. It is recommended that this course be taken prior to taking PA 594.

**PA 594
Affirmative Action Planning (3)**

Designed to instruct the student in the affirmative action requirements imposed on federal contractors by federal laws, presidential executive orders and implementing regulations. Lectures, reading, and discussions will be directed toward an exploration of federal and state case law, the enforcement agencies in the administrative process, complaint investigation, resolution of noncompliance, and the elements of an affirmative action compliance program, including the concepts of availability and goals. Recommended that students have had PA 593.

**PA 595
Public Sector Collective Bargaining: The Legal Framework (3)**

The history and development of public sector collective bargaining in the United States. Specifically included: the role and importance of public sector collective bargaining law; the diversity of collective bargaining laws; comparison of various state laws with proposed national legislation; an in-depth analysis of Oregon's public sector collective bargaining law; the Oregon Employment Relations Board (ERB)—its structure and operation, the rules of proce-

dures of ERB, major functional areas of ERB-bargaining unit determination, representation and decertification procedures, unfair labor practices, the conduct of elections, the Oregon Mediation Service, impasse procedures and continuing legal issues (mandatory vs. permissive home rule and sovereignty bargaining in good faith). This course is a prerequisite for PA 596 and PA 597.

PA 596

Public Sector Collective Bargaining: Negotiations and Impasse Resolution (3)

Deals with the diversity of roles of the parties in negotiation; planning for negotiations; development of original demands and fallback positions; negotiation strategy and tactics; the major issues in negotiating; and the diversity and similarity of negotiations in state government, cities, counties, school districts, and higher education. A mock negotiation case will be bargained. This course will also deal with the process of mediation, fact-finding, and interest arbitration. Prerequisite: PA 595.

PA 597

Public Sector Collective Bargaining: Administering the Agreement (3)

Deals with the nature of the collective bargaining agreement; the establishment of grievance procedure; the meaning of a grievance; the processing of grievances; and continuing grievance problems such as discipline, transfers, seniority, overtime, work assignments, insubordination, layoff, recall, and manning requirements. Emphasis will be on the use of case materials to illustrate these problems. Also includes a discussion of arbitration followed by a mock arbitration session. Prerequisite: PA 595.

PA 598

Values-based Management I (3)

Introduces the model of values-based management as a method to enhance compatibility between the individual and the organization that is essential for decision-making and supervision, particularly in nonprofit organizations. Students will develop a theoretical understanding of the elements of effective supervision and of the impact that a director/supervisor has on the human resource system in their organizations. Students will work through the process of clarifying agency mission, purpose, and values and develop skills for aligning their practices with these values.

PA 601

Research (Credit to be arranged.)

PA 603

Thesis (Credit to be arranged.)

PA 605

Reading and Conference (Credit to be arranged.)

PA 607

Seminar (Credit to be arranged.)

PA 610

Selected Topics (Credit to be arranged.)

PAP 611

Theoretical Foundations of Governance (3)

This course analyzes the foundational, political, social, and economic theories which have shaped institutions and processes of governance during the modern era. Prerequisite: admission to the Ph.D. program in public administration and policy.

PAP 612

Governance, Social Change, and Rule of Law Systems (3)

This course provides students with an understanding of the ways in which the "rule of law" influences the theory and practice of governance and public administration. This understanding is developed by comparing rule of law systems with other ways of creating social order and organizing community life; examining the origins of the rule of law within both liberal democratic theory and the American constitutional tradition; exploring the distinctive institutional role that administration plays in the American rule of law system through its participation in administrative rule making and policy implementation; examining the role ambiguity created for career administrators in carrying out their responsibilities within the American rule of law system. Prerequisite: admission to the Ph.D. program in public administration and policy.

PAP 613

Institutional Foundations of Governance (3)

This course examines the basic concept of governance in the context of the nation state and its political economy. Particular attention is paid to archetypical systems, structures, and functions of governance which developed in the modern era. This material is then related to the development of the American administrative state. Prerequisite: admission to the Ph.D. program in public administration and policy.

PAP 614

Contemporary Governance (3)

Contemporary factors impacting governance world wide: political instability and fragmentation of government; erosion in the jurisdiction and power of the nation state and its causes; the search for new approaches and substitutes to government; accelerated blurring of sector boundaries—increasing use of third party providers; and non-political boundaries. Prerequisite: admission to the Ph.D. program in public administration and policy.

PAP 615

Administrative Process (3)

The purpose of this course is to explore the nature of the administrative process and its relationship to organizational structure, process, and behavior within the broader context of programmatic and organizational governance. Emphasis will be placed on the following topics: the influence of structural alternatives on behavior; value systems and normative prescriptions; organizational culture; and the influence of the administrative process on the way in which agencies formulate and implement policy within the context of their respective legislative mandates. Prerequisite: admission to the Ph.D. program in public administration and policy.

PAP 616

Policy Process (3)

This course focuses on the politics of the policy process. It examines the role, influence, and interaction of legislatures, executives, bureaucracies, courts, policy communities, and citizens. The course follows the stages of policy development: problem definition, agenda setting, budgeting, authorization, implementation, and oversight. Case material is taken from federal, state, and local governments with special consideration given to the intergovernmental aspects of the policy process. Prerequisite: admission to the Ph.D. program in public administration and policy.

PAP 618

Political and Organizational Change (3)

An investigation into the nature of change, particularly its political and organizational manifestations. The focus is on change as a process (i.e., how it happens) as well as a product (i.e., the outcome). Conceptual and theoretical concerns in understanding change, the sources of political and organizational change, change in the governance system, change in contemporary society, and managing in complex and nonprofit organizations will be examined.

PAP 630

Proseminar in International Relations (4)

Graduate seminar surveys the main theoretical and analytical approaches encountered in the study of international relations. Themes include the grand theoretical traditions of liberalism, realism, and radicalism; analytical and methodological perspectives, like behavioralism and rational choice theory; as well as the normative, critical, and postmodern challenges to the mainstream.

PAP 656

Advanced Political Economy (3)

Readings seminar provides a review of the literature in theories and selected issues in international political economy. Core requirement for graduate students in the PAP doctoral program and for master's students in political science who select international relations as their primary field of specialization.

PAP 657

Policy Topics in Advanced Political Economy (4)

Readings seminar providing a review of the literature in theories and selected issues in international political economy. Core requirement for graduate students in the PAP doctoral program and for master's students in political science who select international relations as their primary field of specialization.

PAP 658

Decision Making (4)

This readings seminar provides a review of the literature in theories and selected issues in decision making. Analyzes developments in theories of rational choice, cognition and perception, organizational behavior, bureaucratic politics, intergovernmental relations, multi-level game theory, and an introduction to complexity. Requirement for graduate students in the PAP doctoral program and an elective for master's students in political science.

Research centers and institutes

Criminal Justice Policy Research Institute

550 Urban Center
503-725-4014

The institute is a multi-disciplinary research unit serving the entire PSU community, but affiliated with the Criminology and Criminal Justice Division of the School of Government. It is designed to provide policy makers throughout the state with a

forum in which issues of policy and practice may be explored, using objective, performance-based criteria. It is also designed to bring together the varied resources of Portland State University and coordinate those resources with other institutions of higher education to address issues emanating from the justice community. The institute has an external advisory board, representing a broad cross-section of justice agencies, which serves to focus attention on issues of concern to the community, state, and region.

Projects currently underway, or recently completed by faculty associated with the institute, include:

- Evaluation of the Oregon "Boot Camp" programs.
- Evaluation of the Portland Police Bureau's Domestic Violence Reduction Unit.
- Development of an evaluation and assessment system for the Governor's Juvenile Crime Prevention Program.
- Assessment of Clackamas County Community Prosecution implementation.
- Comparison of risk assessment measures: Clackamas County Community Corrections.
- Assessment of the impacts of prison siting in multiple communities within Oregon.

Executive Leadership Institute

780 Urban Center
503-725-8261
www.eli.pdx.edu

The Executive Leadership Institute strives to identify and promote innovation and excellence in leadership. The institute accomplishes this goal by assisting the Mark O. Hatfield School of Government in meeting the professional development needs of agencies and officials with public service responsibility. The institute undertakes the following five types of activity: master's degree preparation for practitioners at off-campus locations; applied research; technical assistance to agencies in managing technological and organizational innovations; continuing professional education; and community and professional service. Together, these activities support the School of Government's ongoing efforts to enhance democratic governance, develop responsible citizenship, and improve the quality of public service.

Institute for Nonprofit Management

780 Urban Center
503-725-8221/8227
www.inpm.pdx.edu

The Institute for Nonprofit Management, established in 1989, is dedicated to providing high quality, accessible, and relevant education in nonprofit management, leadership, governance, and philanthropy. INPM was the first in the Northwest to offer graduate and non-credit courses in nonprofit studies and is nationally recognized as a leader in this field. In addition to graduate courses leading to a nonprofit concentration within the Master of Public Administration degree, INPM offers non-credit courses applicable to a certificate in nonprofit management, seminars, conferences, community forums, research, consultation, and an acclaimed Leadership Fellows Program. Adjunct faculty who are respected practitioners in the nonprofit community complement the regular faculty in offering more than 20 courses which are designed to link theory and practice.

Institute for Tribal Government

670-C Urban Center
503-725-9000

The Institute for Tribal Government, which is a national leader in its field, provides elected tribal leaders with information and leadership skills dealing with tribal, state, and federal governance and a wide range of related policy issues. Tribal leaders are offered programs to meet their own unique needs either with sessions at the Hatfield School or at tribal sites. Programs are available for addressing federal Indian law, tribal government duties and responsibilities, tribal and state relations, the federal legislative process, federal judicial and administrative procedures, and effective tribal leadership strategies.

Northwest American-Turkish Research Institute

650 Urban Center
503-725-3257

The Northwest American-Turkish Research Institute operates out of the Hatfield School of Government and the Office of International Affairs at Portland State University. The institute carries out academic research and engages in private- and public-sector contracts on topics related to contemporary business, economics, finance, and politics in Turkey and the Eastern Mediterranean. It coordinates international conferences, promotes business relationships, and provides strategic, technical, economic, and political advice to international leaders.

National Policy Consensus Center

720 Urban Center
503-725-9077

The National Policy Consensus Center is a national program working with leaders, including governors and legislators at the state level, to promote the use of consensus building in order to address difficult policy issues and achieve more effective governance. The Center has developed a Public Solutions System which offers a way for the public, private, and civic sectors to work together. The center hosts an extensive network of state dispute resolution programs; sponsored joint projects between states and partner organizations; supplies information, consultation, and technical assistance; and offers training and education in consensus building.

Nohad A. Toulan School of Urban Studies and Planning

350 Urban Center
503-725-4045
www.pdx.edu/USP/

**B.A., B.S.—Community Development
Minor in Community Development
Minor in Real Estate Development
Graduate Certificate in Real Estate
Development
Graduate Certificate in Transportation
M.U.R.P.
M.U.S.
Ph.D.**

The Toulan School of Urban Studies and Planning provides an interdisciplinary approach to understanding the urban setting. The school's programs are structured to allow students living or working in the Portland metropolitan area to take advantage of the broad range of resources available at Portland State University and in the community.

Opportunities for urban education are available through five programs. Undergraduates can major in community development or complement their bachelor's degree in another field by simultaneously meeting the curricular requirements for a minor in community development. Students interested in developing professional planning skills may pursue a Master of Urban and Regional Planning. Interest in developing urban research capabilities may be pursued through a Master of Urban Studies. Individuals desiring higher levels of research skills and/or academic employment may choose the Ph.D. in urban studies.

Undergraduate programs

The Toulan School of Urban Studies and Planning offers an undergraduate major in community development. Community development is a process in which people act together to promote the social, economic, political, and physical well-being of their communities. Career opportunities are available in not-for-profit organizations, private consulting firms, and state, regional, and local governments.

Community development practitioners work on a range of issues including housing, community organizing, transportation, the environment and economic development. The major prepares students for postbaccalaureate employment or graduate work in a professional academic field.

The curriculum is grounded in applied social science and incorporates a great deal of field research. The program takes advantage of the wealth of resources available in the Portland metropolitan area and draws from a variety of academic disciplines and departments. Students specialize in one of three areas of concentrated study: community organization and change, housing and economic development, or communication and community development.

Students may also pursue a 27-credit minor in community development, as well as a 30-credit minor in real estate development.

Admission requirements

Students must be formally admitted to the community development program by submitting an application to the Toulan School of Urban Studies and Planning. Candidates are selected based on written statements of intention. Fall enrollment is strongly recommended to allow students to take core classes in sequence and to create a community environment among each group of students.

Degree requirements

Requirements for majors. In addition to the general University degree requirements, students in community development must complete the following degree requirements. Substitution of coursework is acceptable only by permission from the faculty adviser. Students transferring in with 90 or more credits are not required to take the Sophomore Inquiry Community Studies course. Students can ask to have lower-division courses in sociology, economics, and political science taken elsewhere substitute for the freshman and sophomore courses listed below.

	Credits
Freshman/Sophomore	
UnSt 220 Understanding Communities.....	4
Soc 200 Introduction to Sociology.....	4
Ec 201 Principles of Economics.....	4
PS 200 Introduction to Politics.....	4
Sub-total	16
Required core courses	
USP 301 Theory and Philosophy of Community Development.....	4
USP 302 Methods of Community Development.....	4
USP 303 Community Development Field Seminar.....	4
Sub-total	12
Community development concentrations	
Students will choose to concentrate their work in one of the following areas. Each field of concentration includes a set of required USP courses and elective community development-related courses from the School of Urban Studies and Planning and from other departments. Lists of elective courses for each field of concentration are available from the school office.	
Community Organization and Change	
USP 311 Introduction to Urban Planning.....	4
USP 426 Neighborhood Conservation and Change.....	4
USP 428 Concepts of Community Development.....	4
USP 429 Poverty in the Urban Community.....	3
USP 430 Urban Studies Research Methods.....	4
USP 450 Citizen Participation.....	4
Four elective courses from approved list or	
Housing and Economic Development	
USP 311 Introduction to Urban Planning.....	4
USP 312 Urban Housing and Development.....	4
USP 423 Development Process.....	3
USP 428 Concepts of Community Development.....	4
USP 430 Urban Studies Research Methods.....	4
USP 451 Community Economic Development.....	3
Four elective courses from approved list or	
Communication and Community Development	
USP 311 Introduction to Urban Planning.....	4
USP 426 Neighborhood Conservation and Change.....	4
USP 428 Concepts of Community Development.....	4
USP 430 Urban Studies Research Methods.....	4
USP 450 Citizen Participation.....	4
Two of the following five courses:.....	8
Sp 215 Introduction to Intercultural Communication (4)	
Sp 218 Interpersonal Communication (4)	
Sp 322 Political Communication (4)	
Sp 337 Communication and Gender (4)	
Sp 437 Urban Communication (4)	
Two elective courses from approved list	
Field experience.....	6
Community-based work, either through an individual internship or through participation in an approved capstone.	

Total 68-70

Requirements for minor. To earn a minor in community development a student must complete 27 credits. These courses must include a Sophomore Inquiry community studies course UnSt 220 or its equivalent, USP 311 and USP 301. A minimum of 15 credits of additional USP coursework must be taken. Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling minor requirements.

Requirements for minor in real estate development. The development and management of real estate is a vital function of the urban economy. The real estate development minor will provide education to students wanting to enter the industry. Students in the program will develop skills to evaluate real estate development proposals and understand how real estate development fits into regional planning and economic processes.

	Credits
USP 311 Introduction to Urban Planning.....	4
USP 312 Urban Housing and Development	4
Fin 333 Foundations of Real Estate Analysis.....	3
USP 423 Real Estate Development and Finance.....	4
USP 431/Ec 431 Urban Economics	4
USP 448 Real Estate Market Analysis	3
Electives	6
Fin 439 Real Estate Appraisal (3)	
Fin 449 Valuation (4)	
Fin 452 Investments (4)	
USP 499/Fin 499 Real Estate Finance and Investments (4)	
USP 410/Fin 410 Real Estate Law (4)	
USP 425 Community and the Built Environment (4)	
USP 426 Neighborhood Conservation and Change (4)	
USP 427 Downtown Revitalization (3)	
USP 428 Concepts of Community Development (4)	
USP 446 Real Estate Development II (3)	
USP 451 Community Economic Development (3)	
USP 455 Land Use: Legal Aspects (3)	
USP 468 Oregon Land Use Law (3)	

Graduate programs

With over half of the world's population now living in urban areas, the challenge of creating and maintaining urban places as high quality, healthy, vital places for people and communities has never been more important. Our expectation is that recipients of the graduate degrees and certificates offered by the Toulan School of Urban Studies and Planning will be in the forefront of those efforts, contributing professional leadership and new knowledge in support of this urban century.

The graduate degrees are described in the following sections. In addition to those degrees, the Toulan School also offers two

graduate certificates:

1. Graduate Certificate in Real Estate Development

The Real Estate Development Graduate Certificate is a 25-credit-program of study designed to introduce students to real estate development planning, real estate finance, market analysis, and property valuation. The program is designed both for professionals in the industry and for those seeking to enter the industry. Credits taken as part of the certificate program may be used to satisfy master's degree requirements in several programs including urban and regional planning and business administration. Applicants can learn more about this graduate certificate and the application process at

<http://www.pdx.edu/usp/red.html>.

2. Graduate Certificate in

Transportation

The Graduate Certificate in Transportation is a 21-credit program designed to build the technical and analytical knowledge of those who are in or wish to enter the transportation field. This program could be completed in a single year on a full-time basis or over two years on a part-time basis. Credits taken as part of this certificate program may be used to satisfy master's degree requirements in urban and regional planning. For more information about the certificate and application procedures, please contact the school.

Graduate assistantships. Financial aid programs are administered without regard to race, creed, national origin, handicap, marital status, or sex. The school awards a significant number of graduate assistantships to qualified students. Assistantship awards are reviewed annually and can be renewed for up to two additional years. More advanced students may compete for dissertation fellowships. Applications for graduate assistantships are available from the school and at www.pdx.edu/usp.

Admission requirements

All qualified applicants receive consideration for admission without regard to sex, race, handicap, age, creed, marital status, or national origin.

In addition to the general University requirements listed on page 45, requirements for applications to the Toulan School of Urban Studies and Planning are outlined below and can be found at www.pdx.edu/USP.

Master of Urban and Regional

Planning. A personal essay and three recommendations, on the forms provided, are required from individuals familiar with the student's academic or profession-

al background. Graduate Record Examination scores are not required, but highly recommended. For the M.U.R.P. program, students are admitted for the fall term only. The deadline for fall term applications for the M.U.R.P. program is January 15.

Master of Urban Studies. A letter of intent and three recommendations, on the forms provided, are required from individuals familiar with the student's academic or professional background. Graduate Record Examination scores are required. For the M.U.S. program, students are admitted fall, and winter terms. The deadline for fall term applications for the M.U.S. program is February 1; winter term deadline is September 1.

Doctor of Philosophy in Urban Studies.

A personal essay and three recommendations, on the forms provided, are required from individuals familiar with the student's academic or professional background. Graduate Record Examination scores are required. Ph.D. applicants are strongly urged to complete successfully an introductory statistics course before entering the program. The doctoral applicant's personal essay should include a discussion of the field area(s) in which the applicant intends to concentrate and ideas about research topics that are of interest. For the doctoral program, students are admitted fall term only. The deadline for fall term applications for the Ph.D. program is February 1.

Graduate Certificates

Graduate certificates in real estate development and transportation are offered by the Toulan School of Urban Studies and Planning. Admission to these programs will require an undergraduate degree at an accredited university and a GPA that meets university graduate admission requirements. Additional information on these programs can be found at www.pdx.edu/usp/red and www.cts.pdx.edu.

Degree requirements

Master of Urban Studies. The Master of Urban Studies provides training for students seeking employment in public and private urban research organizations. For some students, employment opportunities can be found in colleges offering two-year degree programs.

The M.U.S. degree requires a total of 52 credits. M.U.S. students pursue a common core of courses dealing with the analysis of urban phenomena (25 credits). Each student also defines a field area which is pursued through coursework (21 credits) and individual research leading to a thesis or research paper (6 credits). In addition, the degree provides for a specialized option in

social and policy research.

Core-area requirements. The urban core-area requirements for the M.U.S. degree include the following courses:

	Credits
USP 513 Urban Economic and Spatial Structure.....	3
USP 514 History and Theory of Urban Studies	3
USP 517 Sociology and Politics of Urban Life.....	3
USP 530 Research Design	4
USP 534 Data Analysis I	4
USP 583 Qualitative Analysis	4
USP 597 Urban Studies Seminar	4

The first four are normally taken in the first year, with USP 597 taken at the beginning of the second year. Students in USP 597 produce a fully developed research paper as a requirement for continuation in the program

Field-area requirements. The student selects a pattern of coursework that equips him or her for research in areas of applied interest. Field areas may focus on urban aspects of social science theory in one of the fields emphasized in the urban studies Ph.D. program or on a substantive issue of particular concern to the student. Relevant courses are available within the School of Urban Studies and Planning and in many other departments within the University. Twenty-one credits of field-area coursework are required.

Research requirements. The M.U.S. degree provides for thesis and nonthesis options. The thesis option requires registration for 6 credits of USP 503 Thesis and completion of a formal thesis. The nonthesis option requires preparation of a substantial research paper (involving registration in 6 credits of USP 501 Research) and successful completion of a written field area examination.

Social and policy research option. Students with a primary interest in advancing their urban research skills may choose a specialized field area in social and policy research. This field requires completion of the following:

	Credits
USP 534 Data Analysis I	4
USP 536 Policy Evaluation Methods	3
PA 555 Program Evaluation and Management	3
Additional courses within the field	9
Total	19

Students selecting this option must present a thesis.

Master of Urban and Regional Planning. The Master of Urban and Regional Planning program provides diversified preparation for professional planning practice. Graduates of the program will acquire skills suiting them for employment in public agencies and private firms involved in the urban development process. The program offers six fields of specialization, to allow the graduate either to enhance previous work experience or to enter the job market

with a more focused area of expertise. These are: transportation, land use, community development, environment, and regional economic development.

	Credits
Core courses	
Planning sequence	
USP 540 History and Theory of Urban Planning	4
USP 541 Public Participation, Diversity, and Ethics	4
USP 594 Planning in the Pacific Northwest or USP 595 Reshaping the Metropolis or USP 549 Regional Planning and Metropolitan Growth Management	3
Methods sequence	
USP 531 Geographic Information Systems for Planners	4
USP 533 Planning Methods I.....	4
USP 535 Planning Methods II	4
USP 584 Negotiation in the Public Sector	4
Analytical methods	
USP 515 Economics: Applications to Urban Studies	4
USP 525 Design Analysis in Planning	2
USP 553 Legal Processes in Urban Planning	1
Workshops	
USP 558 Planning Workshop	9
USP 559 Planning Practice Workshop	1
Specializations and Electives.....	28
Total Credits	72

Field paper/project. Students may choose to prepare an original research paper or project in their field of specialization. The research paper or project is meant to demonstrate a student's ability to integrate and apply material from his or her coursework and is designed in consultation with faculty.

Doctor of Philosophy in urban studies. Dynamic metropolitan regions are increasingly seen as central to economic, social, and political development throughout the world. Composed of one or more central cities, suburbs, and adjacent agricultural and natural areas, they are the essential building blocks of the global economy and the sources of social and political innovation. Understanding metropolitan regions and their problems and analyzing policies to shape their evolution are major concerns of the Urban Studies doctoral program. The program explores these issues from multidisciplinary and interdisciplinary points of view. Through participation in classes and seminars and supervised research and teaching activities, Ph.D. students prepare for careers in institutions of higher education and in research organizations.

Core requirements. Entering students in the Ph.D. in urban studies take the following common courses: USP 613 Urban Economic and Spatial Structure; USP 614 History and Theory of Urban Studies; USP 617 Sociology and Politics of Urban Life; USP 630 Research and Design; USP 634 Data Analysis I; USP 683 Qualitative Analysis; and USP 697 Urban Studies Seminar. The first six are normally taken

in the first year, with USP 697 taken at the beginning of the second year. Students in USP 697 produce a fully developed research paper as a requirement for continuation in the program.

Field area requirements. Doctoral specializations are available in the following areas of advanced interdisciplinary study: planning, community development, policy analysis, gerontology, social demography, economic development and transportation.

◆ **Planning** focuses on the development and implementation of mechanisms for organizing social, economic, political, and environmental change at the local, state, and regional levels. The field includes study of the relationships and interactions among public and private institutions, organizations, citizens, and landscapes; the design of processes for facilitating dialogue among public actors; and the tools for planning analysis and evaluation. As a pioneer in state land use law and a place in which planning discourse is highly visible, Oregon provides a rare vantage point for the study of planning history, planning processes and strategies, and professional practice.

◆ **Community development** deals with the dynamics of neighborhood and community formation and change and with public policies that address the needs of groups and places within contemporary society. The rich civic culture of Portland and the Pacific Northwest and the region's connections to the Pacific Rim provide numerous examples for study and analysis. Within the broad field of community development, students can address such topics as ethnic and neighborhood history, housing and economic development, the roles of public and nonprofit institutions in community building, mediation and conflict resolution, changing patterns and systems of communication, and the changing meanings of place.

◆ **Policy analysis** provides an opportunity for students to identify urban problems, contemporary and historical policy issues, and stakeholders in the policy process. It also allows for analysis of the effects of policies and of the historical and political contexts in which they emerge. Students may approach this field from any combination of applied, theoretical, or critical perspectives, such as program evaluation, policy critique, or historical analysis. Students should identify at least one substantive policy area (such as transportation, housing, the environment, aging, community development, or information infrastructure) and complete a course

of study in that area.

- ◆ **Gerontology** addresses the social issues, problems, policies, and programs that affect the quality of life for our rapidly aging population. Students have the opportunity to work directly with faculty on publicly- and privately-funded research at the College's highly regarded Institute on Aging. Adult development and aging is approached from a multidisciplinary and collaborative perspective. Faculty research interests include: family caregiving and work-family balance, social networks and widowhood, diversity in aging, long-term care policy and programs, housing environments, development and evaluation of training for health professionals, and planning for the aging of the baby-boom generation and beyond. As a state with a national reputation as a leader in the development of community-based, long-term care, Oregon provides a unique environment for the study of aging processes, policies, and services.
- ◆ **Social demography** provides training in the tools of demographic analysis,

with particular attention to the methods of data collection, techniques of demographic analysis, and the interpretation of research findings. Social demography involves the use of the principles and methods of demography in decision-making and planning problems in both public and private settings. Graduates in the field of social demography use demographic data to identify and analyze important population trends and their consequences for work in government agencies, research organizations, and corporations. Faculty in the area of social demography have training in demography, sociology, geography, and statistics. Faculty research includes population distribution and migration, international migration, fertility and family planning, marriage and divorce, public policy uses of demographic data and estimates, and demographic methods.

- ◆ **Economic development** is concerned with the factors that lead to differential rates of economic development at various spatial scales: within and between nations, states, regions, cities, and neighborhoods. In analyzing these dif-

ferences, issues such as the meaning of economic development, who gains and who loses from various changes, as well as analysis of policies to promote economic development, are addressed. The Center for Urban Studies and Institute for Portland Metropolitan Studies offer research opportunities in this field.

- ◆ **Transportation** includes planning, policy, forecasting, measurement, and evaluation of multimodal transportation infrastructure and systems. The multidisciplinary field covers all modes of passenger and freight transport and includes the holistic study of relationships and interactions of the transportation systems with land use, the region, the economy, the environment, institutions, the community, and people. Students can address topics such as impacts of transportation on land use and land values, the relationships between urban form and travel behavior, the costs and benefits of transport facilities, the operation of transportation facilities, equity impacts of transport and the effects of transportation plans and policies. There are opportunities to work on research through the Center for Urban Studies and the Center for Transportation Studies.

Each student pursues two fields of specialization, at least one of which should be chosen from among those listed above. A student-nominated field, developed in conjunction with School faculty, may be offered as a second specialization. Faculty groups specify field-specific course requirements, including methodology courses and courses essential to a multidisciplinary approach. These groups work closely with students to develop coherent specializations that prepare each individual to do doctoral-level research in that field.

Doctor of Philosophy in urban studies—regional science. Regional science brings a variety of social science perspectives to bear in analyzing the growth and development of metropolitan areas, states, and regions. The regional science program shares the same core requirements as the Urban Studies Ph.D. Beyond these, students in regional science design a program of study around two field areas.

The only required course in the second field is USP 691 Current Research in Regional Science. Subject to prior faculty group approval, students may organize second field areas around a topic other than the four identified above. It is recommended that the second field include additional methods courses that support the field's topical focus. For example, in the transportation field area the supporting methods courses might include coverage



of demand modeling, cost-benefit analysis, GIS, and spatial analysis.

Students in the regional science program must pass a comprehensive examination in their two field areas. This is a single examination, developed in consultation with two members of the regional science faculty group.

Doctor of Philosophy in public administration and policy. The Toulan School of Urban Studies and Planning cooperates with other schools in the College of Urban and Public Affairs to offer an interdisciplinary degree in public administration and policy. For details, see the program description on page 314.

Program Rules

Advanced standing in Urban Studies and Planning graduate program. A total of 72 credits in nondissertation graduate training is required of all Ph.D. students. Ph.D. students are also required to take a minimum of 27 dissertation credits. For students with a master's degree in a related discipline, a maximum of 24 advanced standing credits may be requested. All such requests must be accompanied by a listing of previous graduate work for which advanced standing is sought.

The Master of Urban Studies program requires a minimum of 52 credits in graduate courses, of which at least 36 must be taken at Portland State University. A maximum of 17 credits of advanced standing credit may be requested. The Master of Urban and Regional Planning program requires a minimum of 72 credits in graduate courses of which at least 48 must be taken at Portland State University. A maximum of 24 credits of advanced standing credit may be requested.

An M.U.R.P. student may request advanced standing for the 1-credit USP 559 Planning Practice Workshop. If advanced standing credit is approved, the student is considered to have fulfilled the internship requirement. Such advanced standing credit will be included in the 24-credit maximum for all advanced standing; only professional work completed within seven years of the date the degree is granted can be included.

Requirements with regard to both the pattern of coursework and total credits must be satisfied prior to either advancement to candidacy in the Ph.D. program or graduation in the M.U.S. and M.U.R.P. programs. A student is not obligated to enroll in a required course if that student has already acquired knowledge of the subject matter through earlier graduate coursework. In such cases, the student may request exemption from the course. Permission is granted only after obtaining

written verification from the instructor that the student has met the requirements of the required course. All such requests should be made within one year after entrance to the program.

Limitation on graduate/undergraduate courses. Students in the M.U.R.P., M.U.S., and Ph.D. programs are strongly advised to use no more than 12 credits of courses offered simultaneously at the 400- and 500-level in support of their degree programs. Courses must be an integral part of the student's program and courses with the same content must not be available on a purely graduate basis.

Limitation on by-arrangement courses. Admitted Ph.D. and master's students may utilize no more than 12 credits of by-arrangement classes (501/601 and 505/605). In cases where more than 12 credits are needed because of the lack of regularly scheduled classes, a waiver must be submitted for approval by the school Curriculum Committee and by the school director.

Continuous enrollment. All students admitted to the M.U.R.P., M.U.S., and Ph.D. programs in urban studies must be continuously enrolled until graduation, except for periods in which they are absent by approved leave. Taking 3 credits per term during the regular academic year will constitute continuous enrollment. Failure to register without an approved leave may result in termination of student admission.

Grade requirement. A student who receives more than 9 credits of grades of C+ or below in all coursework attempted after admission to an urban studies graduate degree program will be dropped from that program. A student attempting both a master's and a Ph.D. degree in urban studies may receive no more than 9 credits of C+ or below in both programs. MURP students must receive grades of at least B- in all required courses.

Courses

Courses with an asterisk () are not offered every year.*

USP 199 Special Studies (1-4)

USP 299 Special Studies (1-4)

USP 301, 302, 303

Community Development Colloquium (4, 4, 4)

Three-term sequence limited to majors in community development that introduces them to the field. USP 301: Theory and Philosophy of Community Development. (1) New approaches to the philosophy of community development; (2) theory and comparative practice; and (3) case study of local theory and practice, presentation of an in-depth case study from the Pacific Northwest. USP 302: Methods of Community Development. Review

of community organization, community and network analysis, organizational development and management, strategic planning, management issues, and approaches to evaluation. USP 303: Community Development Field Seminar. Participant observation through placement in a community-based organization actively engaged in community development activities on behalf of a specific community, and critical reflection on the placement experience.

USP 311

Introduction to Urban Planning (4)

An interdisciplinary perspective on planning theories, principles, and practice. Focuses on the planning process, particularly at the local level. Explores the political, economic, social, and legal forces that influence the planning function and the roles of planners. Changing concepts in practice are also considered. Recommended prerequisite: upper-division standing.

USP 312

Urban Housing and Development (4)

Problems of housing, development, and redevelopment in an urban setting are analyzed from economic, demographic, and planning perspectives. Introduction to the nature of the urban economy and residential location, with a focus on housing problems and their associated social, physical, and racial aspects. Role of federal and community-based housing policies and programs. Recommended prerequisite: USP 311.

USP 313

Urban Planning: Environmental Issues (4)

Environmental issues and problems are evaluated in the context of planning alternatives. Particular emphasis on the economic and social implications of environmental problems. The planner's concern for achieving balance between these factors is explored through an analysis of various planning approaches, e.g., environmental impact studies, land use controls, and resource analysis. Recommended prerequisite: USP 311.

USP 314

The City in Film (4)

Critically explores urban themes portrayed in contemporary films using lectures, in-class screening, discussion, reflective writing, and analytical essays. Students will experience the unique approach of director Michael Moore (*Roger and Me*) as he attempts to put a face on the seemingly random acts of savage capitalism. In the form of mystery narrative (*Dirty Pretty Things*), students will see the everyday challenges of the immigrant underclass in multi-ethnic London. In *Mon Oncle*, Jacques Tati's satirical contrast of suburban modernism with romantic old Parisian neighborhoods, students will appreciate the timeless sight gags and ultra retro set designs. By exploring the urban themes of these and other films, this course provides a gateway to further engagement with community development, urban studies, and planning.

USP 315

Economics of Sports (4)

Investigates the application of economic theory to the particular arena of sports. Emphasis is placed on the theories of labor, industrial organization, and quantitative methods and their application to topics such as player compensation and movement, stadium financing, team relocation, and racial discrimination. This course is the same as Ec 315; course may only be taken once for credit.

USP 385**History of American Cities (4)**

Traces the evolution of urban centers from the colonial period to the present. Focuses on the developing system of cities, on growth within cities, and on the expansion of public responsibility for the welfare of urban residents. Particular attention is given to the industrial and modern eras. Recommended prerequisite: upper-division standing. Also listed as Hst 337. May be taken only once for credit.

USP 399**Special Studies (Credit to be arranged.)****USP 401/501****Research (Credit to be arranged.)**

Consent of instructor.

USP 404/504**Cooperative Education/Internship (Credit to be arranged.)****USP 405/505****Reading and Conference (Credit to be arranged.)**

Consent of instructor.

USP 407/507**Seminar (Credit to be arranged.)****USP 408/508****Workshop (Credit to be arranged.)****USP 409/509****Practicum (Credit to be arranged.)**

Consent of instructor.

USP 410**Selected Topics (1-4)****USP 419/519****Population and Society (4)**

Survey and analysis of population dynamics (births, deaths, and migration) and society. Examination of demographic concepts, theories, data and measurements, and research. Role of population processes in social life and public policies are highlighted, including population aging, economic development and the environment, urbanization, health and health care, race and ethnicity, and government/social/business planning. Prerequisite: Soc 200. This course is the same as Soc 441/541; course may only be taken once for credit.

USP 423**Real Estate Development and Finance (4)**

Examines urban real estate development, including location of activities within metropolitan areas, public/private partnerships, downtown redevelopment, and affordable housing. Presents tools to evaluate the financial feasibility and performance of a project, including discounting of cash flows and pro forma analysis. Uses a case study method showing how the design, development, market, finance, construction, and management of the project are integrated. Prerequisites for undergraduates: USP 311 and Ec 201.

USP 424**Healthy Communities (4)**

Addresses issues at the intersection of urban policy and planning and individual and community health. Relationships between the ways in which land is used, the transportation choices available, and the health of both urban places and city residents are explored in light of growing concern about increased rates of various health problems. Health consequences

of political, economic, and social aspects of metropolitan life are also examined. Movements and programs to create and maintain healthy communities around the world are analyzed.

USP 425**Community and the Built Environment (4)**

Application of psychological and social concepts to understanding community and its relationship to the built environment and urban design. The use of space in interpersonal relations (personal space, territoriality, privacy); the impact of crowding and density on social relations; and the functioning of social networks in the city.

USP 426/526**Neighborhood Conservation and Change (4)**

The dynamics of neighborhood development, including economic and institutional factors in neighborhood change; neighborhood definition and image, residential choice; residential segregation; neighborhoods in the political process; and neighborhood conservation strategies. Recommended prerequisite: junior standing. Graduate students undertake a substantial independent project in addition to other course requirements.

USP 427/527**Downtown Revitalization (3)**

This course examines the evolution and revitalization of downtowns and main streets over time. It explores the role of downtowns in contemporary urban regions, and introduces the concepts of downtown management and other strategies for promoting vital urban centers. Through readings, field observations, classroom discussions, and a series of assignments, students will explore the interrelationships between the built environment, economic trends, and public policy in shaping the downtowns we see today. Students should learn to understand downtowns as complex and multifaceted places that are always changing and unpredictable, but often play a crucial role in a community's identity and purpose.

USP 428/528**Concepts of Community Development (4/3)**

An investigation of models and perspectives on community development. Both structural and dynamic concepts related to processes of community-based change will be explored, including methodological approaches for assessing community settings, and the various roles and relationships in a community-based decision environment. Includes required field observation and a substantial independent field research project which examines cases of community problem-solving. Prerequisite: USP 301 for undergraduates. Graduate students undertake a substantial independent project in addition to other course requirements.

USP 429**Poverty in the Urban Community (3)**

An introductory course about the nature, extent, and causes of poverty in the United States. It covers a brief historical overview, demographics and trends, explanations of poverty, and anti-poverty policies. Questions of race, gender, and the spatial manifestation of poverty will be addressed.

USP 430**Urban Studies Research Methods (4)**

This course introduces students to social research in urban studies. It deals with hypothesis development, research design, and approaches to the measurement of urban phenomena. It also treats the application of quantitative data analysis to typical problems in urban studies and planning.

USP 431**Urban Economics (4)**

Functions of the urban economy: the market sector and the public sector. Economic analysis of issues such as land use, environmental quality, transportation, housing, income distribution, and financing of urban public services. Prerequisite: Ec 201. This course is the same as Ec 431; course may only be taken once for credit.

USP 445/545*Cities and Third World Development (3)**

Critical survey of historical, economic, cultural, political, and urban aspects of Third World development, starting with the colonial era. Historical patterns of integration of the Third World with the emerging world market system. Covers problems of the post-independence period, focusing on urban sectoral issues and policy alternatives. Specific topics include trade, investment, industrialization, finance, technology transfer, political participation, land use, housing, transportation, information infrastructure, population growth, social services, militarism, and cultural conflict.

USP 448/548**Real Estate Market Analysis (3)**

A well-researched market study provides critical information that can make or break a development project. This course will provide students with the tools needed to evaluate trends and understand the key factors affecting real estate markets. The class will demonstrate where to get and analyze information on the demand for multifamily, hotel, office, industrial, and mixed-use developments. Prerequisite for undergraduates: Ec 201 and Fin 333. Prerequisite for graduate students: USP 598.

USP 450/550**Concepts of Citizen Participation (4)**

Examination of principles, methods, and programs for giving explicit attention to the perspectives of citizens in the development and implementation of public policies and programs. Sets citizen participation in its historical context with an assessment of its impact to date. Participation from the perspective of both the citizen and the government will be covered as will the variety of approaches for achieving participation goals and objectives.

USP 451/551**Community Economic Development (3)**

Course sets community economic development within the context of traditional state and local economic development policy and compares their underlying theoretical perspectives. It examines the impact of recent economic, social, and demographic transformations on local labor markets and surveys the labor-market problem solving activities of local governments and community-based organizations. Business and commercial development strategies are also explored.

USP 454/554
The Urban School and “At Risk” Status (3)

Draws upon theory, research, and practice for the examination of the conditions of being “at-risk” in urban schools. Explores the family, community, and school environments and their relationships in the hindrance of development of children and youth leading to their “at-risk” status. This course is cross-listed as EPFA 456/556. May be taken only once for credit.

USP 455/555
Land Use: Legal Aspects (3)

Land use and planning from the legal perspective. Includes historical review of attitudes toward property tenure and ownership; the relationship between local planning and regulations; and current issues and perspectives on land use including emerging state and federal roles. Graduate students undertake a substantial independent project in addition to other requirements.

USP 456/556
Urban Transportation: Problems and Policies (3)

An introduction to urban transportation policy from a historical and political perspective. Historical developments in transportation policy are traced from the early streetcar days up through the present. Federal, state, and local transportation policies are examined for their impact on urban spatial and economic development. An overview of current issues in transportation policy and planning includes transportation demand management strategies, transit-oriented design, road pricing, and alternative transportation modes. The intersection of environmental and transportation policy is also examined, as is the decision-making structure at the local, regional, and state level.

USP 457/557
Information Cities (3)

Focuses on the political, social, and cultural impacts of mass media and information technologies within the urban matrix. Contextualizes the “information society” in historical, institutional, political, economic, and global settings. Topics include the flexible production, the segmentation of consumption, alternatives to mass media, the Web, the reorganization of work, the transnationalization of culture, commercial and political surveillance, and the development of urban information infrastructure.

USP 465/565
Pedestrian and Bicycle Planning (3)

Examines the importance of walking and bicycling as means of transportation in a sustainable urban environment. Covers planning, design, implementation, and maintenance of bikeways and walkways, as well as ancillary facilities such as bicycle parking. Focus on the role of education, advocacy, and outreach in improving walking and bicycling conditions. Study relevant examples from various cities, with a heavy emphasis on Portland’s experience.

USP 468/568
Oregon Land Use Law (3)

The Oregon program is placed in a national context that stresses the broad nature of planning here. Structural relations between state, regional, and local government planning and regulation are analyzed. Legal aspects of the implementation of the various functional statewide planning goals are studied, as are the Oregon Land Use Board of Appeals and recent developments in local government land use planning and regulatory processes.

USP 480/580
Political Economy of Nonprofit Organizations (3)

Considers theories of altruism, trust, and social capital. Examines the connections between wealth and social responsibility and between elite status and social reproduction. Explores the broad scope of nonprofit activity in the economy, the interdependence of government and nonprofit organizations in the modern state, and the role of think tanks in shaping public policy. Surveys the dramatic rise of non-governmental organizations in developing countries and the future of nonprofits in a global economy.

USP 490/590
Green Economics and Sustainable Development (3)

Examines prevailing assumptions about economic growth, production, consumption, labor, and leisure. Considers how changes in these basic assumptions might help us design an economic system that includes alternative values such as appropriate scale, community impact and environmental sustainability.

USP 493/593
Advanced GIS Applications (3)

Offered as a studio-based GIS class. The objective is for students to apply GIS skills acquired in previous GIS courses to a specific real-world spatial problem. Tasks will involve problem definition, primary data collection, advanced GIS analysis, and presentation of results. This format will give students practical experience in implementing GIS technologies with specific emphasis on planning problems. Students will be required to work in small groups in a simulated professional planning practice environment. Recommended prerequisites: USP 531 and USP 543 or USP 591 and 592.

USP 499/599
Real Estate Finance and Investments (3)

Application of finance and economic principles to analysis of real estate finance and investments. Emphasis on the development of problem solving capabilities through the use of computer application programs. Special attention is given to risk analysis, alternative mortgage instruments, hedging techniques, and the tax effects of real estate investment. Prerequisite for undergraduates: BA 303 or USP 423. Recommended for graduate students: USP 598 or equivalent. Cross listed as Fin 499/599. This course may only be taken once for credit.

USP 503
Thesis (Credit to be arranged.)

USP 510
Selected Topics (1-4)

USP 513/613
Urban Economic and Spatial Structure (3)

Provides an introduction to the economic and spatial aspects relevant to the field of urban studies. Provides an overview of existing theories and empirical evidence relating to urban spatial and economic relationships. Examines the impact of federal, state, and local government policies, and changing economic conditions on these relationships.

USP 514/614
History and Theory of Urban Studies (3)

Leading thinkers and milestones in the analysis of urban development and urban life. Complementary theories and models of the social sciences. Postmodern approaches. Visionary and critical responses to the possibilities of metropolitan life.

USP 515
Economics: Applications in Urban Studies (4)

Microeconomic analysis of individual and firm behavior is developed with emphasis on applications to urban studies. Topics which may be covered include: land use and land rents, urban structure, poverty, housing and slums, transportation, environmental quality, and local government finance.

USP 516/616
Cities in the Global Political Economy (3)

Introduction to political theory and the political economy of globalization. Begins with core political ideas from classical works of political economy (Locke, Rousseau, Smith, Mills, Marx, Marshall, Keynes, Friedman, and Rawls) and proceeds to an analysis of the rise of transnationalism and globalization. Looks at changes in the global economy, revolutionary changes to capitalism, the fall of communism, and impacts of globalization on cities, communities, the state, work, social mobility, welfare, cultural diversity, and the environment.

USP 517/617
The Sociology and Politics of Urban Life (3)

A survey of important theories of and empirical research about the social structure and political dynamics of urban areas. The impacts of globalization on urban social and political life, the changing nature of community and social relations within cities and suburbs, and evolving patterns of intergovernmental cooperation and conflict within metropolitan regions will be analyzed.

USP 520/620
Applied Demographic Methods I (4)

The first of a two-course sequence. The purpose is to introduce the various basic methods of demographic analysis. The topics to be covered include data sources, population characteristics and change, and measures of mortality and fertility. In addition, the course will help students develop good judgment about data availability and quality, and acquire skills for presenting data. Recommended prerequisite: a course in regression analysis, such as USP 534.

USP 521/621**Applied Demographic Methods II (4)**

The second of a two-course sequence. The purpose is to introduce more advanced methods of applied demographic analysis. The topics to be covered are: data sources, internal and international migration, data evaluation, population estimates, and projection projections. The course will consist of readings, lectures, laboratory sessions, homework exercises, one examination, and one term-long project.

USP 522/622**Practicum in Applied Demography (4)**

Represents the capstone course for the graduate concentration in applied demography. The focus is on integrating a practicum experience with the methods of applied demography into a research paper. Students will develop, revise, and resubmit numerous drafts of a final research paper. Students will also provide professional peer review in evaluating the development of fellow student research papers.

USP 523**Real Estate Development I (3)**

Evaluates the new public/private partnerships that are necessary for downtown redevelopment, historic rehabilitation, integrated mixed-use urban centers, urban villages, and new communities. Students will analyze the critical conceptual, feasibility, and deal-making phases of the development process, as well as the development and management stages. The course examines the new affirmative roles played by both public and private developers, as well as unusual joint development entities. Also considered are innovative concepts of incremental growth, land and development banking, shared parking, and alternative development patterns. Recommended prerequisites: USP 515 or USP 598 (may be taken concurrently).

USP 524**Site Planning (3)**

This course introduces the fundamentals of site planning in an urban context, as well as contemporary urban design theory and practice. Students will learn the principles of site planning and urban design at the scale of urban centers and specific sites, as well as the synthesis of multiple design decisions made by different actors, at different times, about different properties. The course will explore these topics from various perspectives, including planners and designers, developers and regulators, and others. Slideshow lectures, downtown walking tours, and a term project will use Portland as a living laboratory for how the principles of urban design and site planning are played out in public and private development projects. Students will work in teams to apply class principles to a specific site that is currently slated for redevelopment.

USP 525**Design Analysis in Planning (2)**

Approaches to the analysis of design issues in urban planning. The definition of urban space through mass, rhythm, and scale. Design and urban circulation. Planning tools for the implementation of design goals.

USP 530/630**Research Design (4)**

Principles of research design, including philosophical bases of scientific research, approaches to research, problem identification, problem statement, development of research questions, development of research hypotheses, and the relationship of research hypotheses to modes of data gathering and analysis. The laboratory (530L) must be taken concurrently. Recommended prerequisite: USP 430.

USP 531**Geographic Information Systems (GIS) for Planners (4)**

Introduction to principles and methods of collecting, organizing, analyzing, and visualizing geographic information. Explores types and sources of geographical data used in urban and regional studies and planning with an emphasis on Census data. Provides an overview of principles and components of Geographic Information Systems (GIS) as a primary tool of spatial data analysis and visualization. Attention is given to practical applications of GIS and to developing essential skills in desktop mapping and spreadsheet software.

USP 532**Data Collection (4)**

The acquisition of data for research in an urban context. Emphasis is on the concepts, terminology, and methods related to the use of survey research and secondary data. Recommended prerequisite: USP 430 and/or an introductory undergraduate statistics sequence and USP 530.

USP 533**Planning Methods I (4)**

Introduction to applied research in planning with emphasis on problem definition, planning and policy research design, collection and analysis for secondary data, and the use of qualitative observations. Prerequisite: undergraduate statistics course.

USP 534/634**Data Analysis I (4)**

Application of multivariate statistical analysis in an urban context. Emphasis on applications of various techniques within the general linear model. Recommended prerequisite: USP 532. The laboratory (USP 534L) must be taken concurrently. Recommended prerequisite: USP 430.

USP 535**Planning Methods II (4)**

Continuation of USP 533 focusing on statistics, forecasting, interpretation, and presentation of data in the context of planning practice. Prerequisite: USP 533.

USP 536**Policy Evaluation Methods (3)**

Focuses on the methodological issues that must be addressed in attempting to evaluate programs and policies. Course offers an introduction to a variety of techniques useful in policy evaluation. Topics which may be covered include difference equations, Markov models, and queuing models. A section of the course considers the methodological issues that arise in cost-benefit analysis, such as present value calculations, determining the value of nonmarket benefits, and correctly evaluating costs. Recommended prerequisite: USP 515 or equivalent.

USP 537/637**Economics of Urban Transportation (3)**

The transportation system is critical to the functioning of an urban area. The movement of people and goods affects both the productivity and livability of the region. Transportation systems also affect and are affected by land use and location decisions. This course presents the economic analysis of urban transportation. This will include analysis of the effects of transportation systems on land use and location as well as the evaluation of transportation investments. These methods will then be applied to evaluation of various proposals to improve the urban transportation system. Recommended prerequisite: USP 515 or 615.

USP 540**History and Theory of Planning (4)**

The evolution of the urban planning field from its 19th century European origins through the 20th century U.S. history. Course addresses the question: why do we produce and implement plans? Specific topics include: philosophical issues and political-organization contexts of professional activity; the place of planning in the political economy of U.S. metropolitan development; and problems of rationality in forecasting, analysis, decision making, and design.

USP 541**Public Participation, Diversity and Professional Ethics (3)**

Examination of principles, methods, and programs for giving explicit attention to the perspectives of citizens in the development and implementation of public policies, programs and planmaking. Sets citizen participation in its historical context with an assessment of its impact to date. Examines issues pertaining to working with diverse communities and highlights ethical dilemmas faced by professional planners.

USP 542**Land Use Implementation (3)**

An examination of alternative approaches to implementation of plans. Topics include: regulatory tools, e.g., zoning and subdivision ordinances; review functions, e.g., design review and administrative review; and programs, e.g., growth management, capital improvements, community development, housing assistance plans; and political-procedural issues, e.g., permit streamlining, cost impacts.

USP 543**Geographic Applications to Planning (4)**

Principles and models of spatial organization, behavior, and location in geographic space. Major conceptual models of urban structure and form, urban regional hierarchy, transportation flows and other forms of spatial interaction, and their applications to modern planning and other disciplines. Spatial data models (rasters, TINs, LRSs, other) and advanced analytical and modeling capabilities of GIS (surface, 3-D, and network analyses). Discussion of real-life GIS applications to transportation, land use, environmental planning, community development, and related areas.

USP 544**Urban Transportation Planning (3)**

Principles of urban transportation planning. Urban transportation problems and policy formation. Techniques used in transportation planning.

USP 546**Real Estate Development II (3)**

Provides students the experience of developing a comprehensive and unified analysis of a commercial real estate project. Each student will submit a case study with greater specificity showing how the design, development, market, finance, construction, and management of the project are integrated. A select number of projects in the greater Portland area will be analyzed as case studies. Students will work closely with industry participants and faculty to develop their analysis as well as alternative strategies for the project at critical stages of its development. Prerequisite: USP 523.

USP 547**Planning for Developing Countries (3)**

The nature of the urban and regional planning process in developing countries. Tools, approaches and/or improvisations utilized in regions where data and information are unreliable or insufficient. Relationship of planning process to the economic and political realities of developing nations. The impact of rapid social change and social conflict on the urban and regional development process. Differences between poor and rich countries in planning approaches and expectations.

USP 549**Regional Planning and Metropolitan Growth Management (3)**

Explores regional planning in the U.S. today through an examination of historical and contemporary regional planning practice. Begins with an overview of the history of regional planning, including the evolution of thought regarding regionalism and the nature of regions. Examples of regional plans will be used as the basis for examining assumptions, approaches, and methods serving as the foundation for regional planning practice. A synthesis of the findings of the review of plans will be used to draw general conclusions about the field and its prospects. Pays particular attention to the principles, approaches, and methods of growth management generally and with respect to metropolitan regions.

USP 552/652**Urban Poverty in Critical Perspective (3)**

Examines historical, empirical, and theoretical perspectives on urban poverty in the United States. It addresses the politics of poverty discourse by examining why explanations and policy prescriptions have emphasized morality and behavior; race, family, and culture; and dependency and responsibility rather than systemic economic inequality.

USP 553**Legal Processes in Urban Planning (1)**

Covers the legal context within which land use planning and plan implementation takes place at the local level. Requirements for the conduct of hearings, appeals, and evidentiary processes are analyzed; skills for and techniques of writing findings and conditions of approval are

developed; and questions of ordinance interpretation and liability are discussed.

USP 554/654**Data Analysis II (4)**

Takes an applied approach to statistical analysis and research methodology and is the second in a two-course sequence. Provides students with statistical background, conceptual understanding, technical writing skills, computer application, and the ability to apply these skills to realistic data analysis problems and research designs. Topics include simple regression and correlation, multiple regression, and logistic regression. The laboratory (USP 554L/654L) must be taken concurrently. Recommended prerequisite: USP 534/634 or an equivalent course approved by the instructor and prior experience with statistical software.

USP 558**Planning Workshop (3, 6)**

Organized team approach to a current planning problem in the Portland metropolitan area. Focus on planning practice, field investigation, data analysis, written and oral communication. Work program includes strategies, methods, and skills needed to identify issues and draw together all participants in the search for solutions. Emphasis is on the blending of practical skills with knowledge gained from core-area courses. Two-term sequence, credit for first term dependent upon successful completion of the second term.

USP 559**Planning Practice Workshop (1)**

Involves the completion of a 400-hour internship as part of the M.U.R.P. program. Content of the internship and expectations for it are negotiated among the student, the academic adviser, and the field sponsor. Student must also participate in a colloquium which will emphasize critique at the level of the job, the organization, and the issues with which the organization is concerned.

USP 560/660**Policy Process (3)**

Focuses on the politics of the policy process. It examines the role, influence and interaction of legislatures, executives, bureaucracies, courts, policy communities and citizens. Follows the stages of policy development: problem definition, agenda setting, budgeting, authorization, implementation and oversight. Case material is taken from federal, state, and local governments with special consideration given to the intergovernmental aspects of the policy process.

USP 561/661**Policy Analysis: Theoretical Foundations (3)**

Theories and ideologies of modern age that guide and constrain policy formation, administration and evaluation. Of particular concern is the understanding of the concepts of individualism, collectivism and community developed by the philosophers and social and behavioral scientists of this period.

USP 562**Real Estate Development Workshop (3)**

Students form a real estate development team and produce an original development plan,

including the development concept, the market analysis, the conceptual design, economic analysis, capital and operations budget, and management plan. The student's plan will demonstrate and apply mastery of the development concepts and tools learned through the previous courses. Prerequisite: USP 523 or instructor's consent. Course may be taken twice for credit with instructor's consent.

USP 564**Political and Administrative Issues in Aging (3)**

Coverage of organizational dynamics as related to the elderly including the provision and use of services. Covers voting behavior and advocacy as well as administrative and legal issues that are particularly applicable to the elderly.

USP 566/666*National Urban Policy (3)**

Examination of the federal government's involvement with urban issues from a historical and political perspective. Focus on policies pertaining to social welfare and economic development, with an overview of other policy arenas such as housing, health, and education. Critical analysis of how and why the federal government responds to urban crises with national policy initiatives and how changes in political regime correspond with changes in policy emphases and perspectives.

USP 567/667**Urban Housing Policies (3)**

Review of the history and the role of public policy in the housing sector. Study of past and current trends in the delivery of housing services in urban areas. The basic philosophies related to the supply of housing are analyzed and examined relative to current trends in the delivery of housing services in urban areas. Critical review of the role of the federal government and the construction industry. Equal attention to the role of public housing and the impact of urban renewal. Active participation in discussion and a research paper are required.

USP 570/670**Transportation and Land Use (3)**

An analysis of transportation and land use interactions in urban areas. The impact of highway and transit changes on travel behavior, locational decisions, and urban form are examined. Recommended prerequisites: USP 515 and 544.

USP 571/671**Environmental Policy (3)**

Surveys federal, state, and international environmental policy-making with an emphasis on process design. Political and technical objectives for policy, the roles and responsibilities of institutions, federal-state tensions, representation and analysis of stakeholding interests, the role of the media, and environmental justice are key elements. Topical areas include issues concerning resource management as well as pollution prevention.

USP 572/672**Regional Economic Development (3)**

This course focuses on methods of analyzing why regions differ economically, how they interrelate, and why and how they react to changes in economic policies and conditions.

Part of the course will be devoted to a study of models of regional structure and growth, such as economic base or input-output, and the strengths and weaknesses of each in modeling the regional economy. The remainder of the course will be concerned with the development of models for use in regional forecasting and/or evaluation of policy changes on regional development. Recommended prerequisite: USP 515.

USP 573/673

Housing Economics (4)

Looks at the economics of real estate and housing, including land rent, interest rates, apartment rents, and housing prices, using an economic framework. Basic concepts in urban economics such as land rents, externalities, and public goods are reviewed. Explores the technique most commonly used in real estate and housing economics: hedonic pricing. Explores the rationale and impact of government intervention in the private real estate market. Recommended prerequisite: USP 515 or USP 598 or undergraduate course in economics.

***USP 574/674**

Spatial Analysis (3)

The use of geographically coded data to identify and anticipate future patterns of human activity in metropolitan areas and systems of cities. Emphasizes techniques to establish whether the characteristic landscapes associated with static and dynamic models of behavior are present. Diffusion processes, expanded location theories, and models of decision making from spatially arrayed cues receive particular attention. Recommended prerequisite: USP 532.

USP 576/676

Activity Location (3)

The location of human activities in urban systems. Location of economic activities where profit maximization is desired, and location decisions with equity maxima.

USP 577/677

Urban Environmental Management (3)

An accelerated survey of principles, concepts, and techniques employed in the management of urban environmental problems, with particular emphasis on "best practice" and emerging ideas. Selected topics may include: watershed stewardship, brownfield development, green spaces, protection of urban wildlife, stormwater management, urban agriculture, residential toxics.

USP 578/678

Impact Assessment (3)

Empirical techniques employed in measuring the impacts associated with land use change. Topics: goals achievement matrix approaches to impact assessment, trade-offs between community and regional welfare, distance and time in urban analysis, estimating the social profitability of land development, cost-benefit analysis applied to freeway location, techniques for valuation of nonpriced resources, measuring municipal revenue and expenditure impacts, gravity models and transport demand estimation, economic base analysis for employment and population impact assessment, estimating air and noise pollution associated with land development. Recommended prerequisite: USP 515.

USP 579

State and Local Public Finance (3)

The course will focus on the tax burdens, fiscal resources, and expenditure patterns of local governments in metropolitan areas. The impact of revenue sharing and categorical grants will be discussed in relation to state and federal influence on local government finance. The spatial distribution of local government services, transfer payments, and tax burdens will be analyzed. Special attention will be paid to Oregon's complex property tax limitations. Prerequisite: USP 515.

USP 581/681

Environmental Psychology (3)

Examination of the relationship between people and their physical environments. Specific topics include human spatial behavior (personal space and territoriality), the contribution of the behavioral sciences to architectural and urban design, community and neighboring in the city, and environmental cognition.

USP 583/683

Qualitative Analysis (4)

Study of a variety of qualitative methods of analyzing social science problems, with an emphasis on applications to urban studies. Students study the philosophy of academic inquiry, understanding and interpretation of social action. Specific techniques include content analysis, participant observation, field observation, ethnography, interviewing, and focus groups, among others. Organization, coding, and analysis of qualitative data. Recommended prerequisite: USP 530/630.

USP 584/684

Negotiation in the Public Sector (4)

Overview of conventional and innovative applications of negotiations in public sector activities, and the potential and limitations of negotiation-based approaches to public decision making. Key components include negotiation theory, individual skill development, and a review of the institutional, legal, and political context of negotiations.

USP 585/685

Housing and Environments for the Elderly (3)

The urban environment as a physical and social context for the diverse lifestyles of its elderly residents. Theoretical approaches to aging and the environment; perception and impact of living environments on older adults. Specific topics include housing and services alternatives, issues in developing, regulating, and managing housing for the elderly, and housing design.

USP 586/686

Urban Social Networks (3)

Analysis of the social psychological and anthropological literature on social networks: the structure and content of interpersonal networks (including kinship, friendship, instrumental) in an urban setting. Specific topics will include: the nature of interpersonal ties in the city, urban migration and networks, access to urban resources, methods of analyzing personal and group networks.

USP 587

Travel Demand Modeling (3)

Understand, analyze, and apply travel demand forecasting models from an applied and practi-

cal perspective. The underlying theoretical basis of model components will also be covered. Student will become familiar with the traditional four-step travel forecasting process, including model application software package, and interpretation of model output. Involves hands-on use of transportation modeling software. Prerequisites: an introductory course in urban transportation planning or professional experience in urban transportation planning; familiarity with spreadsheet software; college-level algebra; and introductory statistics (i.e., regression analysis). Prior experience with DOS is helpful but not mandatory.

USP 588/688

Sustainable Development Practices (3)

Introduction to analytic and management approaches intended to limit the social and environmental harms associated with most past patterns of development. Builds upon basic understanding of socio-environmental change and provides a foundation for subsequent in-depth studies of particular sustainable development strategies and analytic techniques. Students study a broader range of sustainable development topics, tools, and techniques.

USP 589/689

Advanced Urban Politics and Sociology (3)

This is an advanced readings seminar focusing on the literature and emerging theoretical and methodological debates in the fields of urban sociology and political science. This course is intended as an intensive seminar for graduate students seeking both greater familiarity and involvement with the literature and discourse in these fields. Prerequisite: USP 517/617.

USP 591

Geographic Information Systems I: Introduction (4)

The use of computers in Geographic Information Systems (GIS) and mapping. Includes theory of databases related to geographic information management and practical aspects of database design. Students will use a variety of programs for mapping and spatial analysis of geographic information. Each student completes a series of exercises demonstrating a variety of approaches to the analysis and display of spatial data. Recommended prerequisite: Geog 380 or equivalent experience in cartography. Students enrolling in this class must register for a computer lab section. Also listed as Geog 488/588, may only be taken once for credit.

USP 592

Geographic Information Systems II: Applications (4)

Analysis and applications of geographic information systems concepts and technology to land planning and management issues. The multipurpose land information systems concept is used as an organizing device for spatial registration of data layers to achieve data sharing and compatibility among functions. User needs assessment and systems design provides the basis for systems procurement, implementation, and use. Recommended prerequisites: Geog 488/588 or USP 591. Students enrolling in this class must register for a computer lab section. Also listed as Geog 492/592, may only be taken once for credit.

USP 594**Planning in the Pacific Northwest (3)**

This course will utilize the work of Pacific Northwest historians, writers, critics, and others as a vehicle for equipping planners with a somewhat systematic and certainly eclectic cultural overview of the region they hope to serve. This course will attempt to prepare them to be members of a place and of a culture of place, and to embrace the art and literature of the Pacific Northwest as part of their ongoing professional development. Though focused on the Pacific Northwest, the general approach used in this course should be applicable to other regions as well.

USP 595**Reshaping the Metropolis (3)**

Examination of the contrast between classic models of metropolitan settlement and new patterns emerging in the late twentieth century. Land use changes in the context of new patterns of economic activity; ideas about the physical form of the good city and the societal implications of development patterns; issues of residential choice, community change, globalization, and environmental protection as affected by metropolitan growth.

USP 596/696*Theory of Urban Form (3)**

Seminar which addresses itself to two basic questions: what forces determine urban form and, how do these forces interact. Urban form in this seminar is interpreted as more than just physical form—it includes political, social, economic, cultural, etc., individually and combined. Participants prepare and present a major research paper on subjects of theoretical relevance to urban form.

USP 597/697**Urban Studies Seminar (4)**

Research seminar required for second-year students in the urban studies Ph.D. and Master of Urban Studies programs. Students apply their substantive background and methodological training to develop all the components of a social science research paper: statement of focused research question, literature review, development of hypotheses, definition of appropriate methodology, design of data acquisition, and pilot testing of data acquisition strategy. Recommended prerequisites: USP 530, 514/614, 513/613, and 517/617.

USP 598**Introduction to Finance and Real Estate (3)**

Designed for students seeking the graduate certificate in real estate development who have little or no business education, or for those students who desire a course in basic finance and real estate concepts and techniques. Introduces business finance within the context of commercial real estate. Concepts and techniques will include financial statements, analysis, and forecasting; present value and discounted cash flow analysis, an introduction to real estate valuation measurements; and analysis of performance risk versus return. Students also receive an overview of the legal definitions of real estate and its forms of ownership, as well as an overview of real estate title, contract, regulation, and financing issues. Recommended prerequisites: Ec 201 and 202.

USP 601**Research (Credit to be arranged.)****USP 603****Thesis (Credit to be arranged.)****USP 605****Reading and Conference (Credit to be arranged.)****USP 607****Seminar (Credit to be arranged.)****USP 610****Selected Topics (1-4)****USP 615****Economic Analysis of Public Policy (4)**

Introduction to the use of microeconomic analysis in the evaluation of public policy. Intended for entering graduate students with a limited background in economics. Develops basic analytic methods and emphasizes application of the analysis to issues of public policy. Prepares students for advanced classes that use this type of analysis.

USP 635**Regional Science Theory (3)**

This course covers theoretical subjects in the field of regional science associated with locational and regional development analysis, and analysis pertaining to regional development planning. Recommended prerequisite: USP 634.

USP 636**Political and Economic Decision-making (3)**

Examines the philosophical and conceptual assumptions embodied in alternative decision-making theories in the fields of economics and politics. Designed to show students the differences in individual and collective decision-making processes and the technical and social challenges faced in decision-making processes in the market place and the realm of politics. Examples cover local, national, and international policy topics. Recommended prerequisite: USP 515/615.

USP 655**Advanced Data Analysis: Structural Equation Modeling (3)**

Introduces students to structural equation modeling, a regression-based technique that incorporates elements of path analysis and confirmatory factor analysis. Topics covered include path analysis, confirmatory factor analysis, and structural models with cross-sectional, longitudinal, and multiple groups. The general goal is to provide a thorough background in the conceptual aspects, statistical underpinnings, and application of this method.

USP 656**Advanced Data Analysis: Multilevel Regression (3)**

Intended to introduce students to multilevel regression techniques (also known as Hierarchical Linear Models or HLM), presenting the conceptual underpinnings and application of the techniques for the two most common applications of multilevel models: hierarchical and longitudinal data sets. Multilevel regression is a statistical model that extends multiple regression to data that are hierarchically structured and is used for the estimation of growth curves with longitudinal data.

Hierarchical data are common in many kinds of organizational and regional research, because data occurs in natural groupings such as administrative units, geographic regions, or schools.

USP 691**Current Research in Regional Science (3)**

Focused reading and advanced student research on emerging topics and issues in the field of regional science. Recommended prerequisite: Consent of instructor.

Research centers and institutes

Center for Urban Studies

350 Urban Center 503-725-4020

The Center for Urban Studies, established in 1966, is a multidisciplinary research unit in the College of Urban and Public Affairs. The center's primary research emphases include: urban services, determinants of property value, transportation, regional economic analysis, geographic information systems, and regional decision making. In addition to its research function, the center serves as a resource for community service to units of local government.

Publications of the center include reports on fiscal analyses of municipal services provision, transportation investment analysis, analyses of urban services, economic and urban development, transportation and land use interactions, transit finance, special needs transit programs, traffic monitoring, travel behavior, transit and parking, recycling, and various aspects of geographic information systems.

The center has sponsored conferences on important urban topics for the interested public. In conjunction with the graduate programs in urban studies and planning, the center provides students with numerous opportunities for research and outreach experience through graduate assistantships, research credit, and informal project participation.

The center also houses the Community Environmental Services (CES) Program. CES provides assistance to local communities, governmental agencies, and private organizations on a contractual basis. The mission of CES is to provide students with the opportunity to develop leadership, practical job skills, and civic responsibility, through education, service, and research which address environmental issues and resource sustainability.

Institute of Portland Metropolitan Studies

780 Urban Center
503-725-5170
www.pdx.edu/IMS/

The Institute of Portland Metropolitan Studies is an independent and neutral organization through which community issues can be addressed by higher education. As a service and resource center in the College of Urban and Public Affairs at Portland State University, the institute's mission is to serve the region and further the urban mission of Portland State University by providing access to the resources of higher education for area communities; creating a shared understanding of the metropolitan area, its issues and prospects; providing a neutral forum for the discussion of critical metropolitan policy issues; creating partnerships linking faculty, students, and community groups to meet community and scholarly objectives; and sponsoring public service research.

By acting effectively on this mission, the institute enables the University to better serve people and the communities of the region and helps them to be better equipped to meet the challenges of growth and change.

The institute sponsors research projects designed to address current and emerging issues of regional significance. By disseminating new information and perspectives about the Portland region, the institute fosters an awareness of the common problems and solutions that citizens, decision makers, and scholars need to know. The institute's governing board identifies research issues that have substantial benefit to the area; projects include forums and seminars, a Web page, publications that showcase the region, and ongoing service and research initiatives.

While administratively located within Portland State's Toulon School of Urban Studies and Planning, the institute is a resource for all departments and for all higher education institutions in the state.

Population Research Center

570 Urban Center
503-725-3922
askprc@pdx.edu
www.upa.pdx.edu/CPRC

The Population Research Center provides a setting for demographic research within the College of Urban and Public Affairs. The center provides a research and teaching focus for the investigation of the causes and consequences of demographic change in current society.

As the lead agency of the Oregon State Data Center Program, the center has access to the various files produced by the U.S. Census Bureau. This information includes current and past census data for the state of Oregon, and the results from such other U.S. Census Bureau surveys as the American Housing Survey and American Community Survey. These data are housed in the center's library and are available to faculty, students, and the public. In addition to providing outreach to Oregon's counties and communities, the center faculty teach courses in applied demography.

One of the important responsibilities of the center is to produce the official population estimates for Oregon's counties and incorporated cities. Typical research activities found within the center include enrollment forecasts for school districts, market analysis for housing projects, social and economic factors affecting demographic change, population distribution and population migration, population geography, and demographic methods. Center staff regularly assist city, county, and state governments on examination of population issues.

The center's current staff includes personnel trained in demography, sociology, geography, and statistics. This variety of expertise enables the center to provide a multidisciplinary approach to population research.

Center for Transportation Studies

550 Urban Center
502-725-4024
www.cts.pdx.edu/

An equitable and efficient transportation system for people and goods has a significant influence on the well-being of every citizen, impacting quality of life and the economy. Social, environmental, and technological trends must be anticipated and incorporated into a "smart" transportation system in order to ensure resource preservation and enhancement of the region's economic productivity. Toward this end, the Center for Transportation Studies, a unit within the College of Urban and Public Affairs, strives to stimulate and conduct multidisciplinary research on transportation issues, facilitating the dissemination of information and encouraging the implementation of research results.

Directories



Oregon State Board of Higher Education

The Oregon State Board of Higher Education, the statutory governing board of the seven-campus Oregon University System, is composed of 11 members appointed by the Governor and confirmed by the Oregon State Senate. Board members, other than student or faculty members, serve four-year terms. Student and faculty members serve two-year terms.

Terms expire June 30

Henry Lorenzen , Pendleton President	2007
Kirby Dyess , Beaverton Vice President	2008
Donald W. Blair , Beaverton	2008
Adriana S. Mendoza , La Grande	2007
Tim Nesbitt , Portland	2008
Geri Richmond , Eugene	
John E. von Schlegell , Portland	2009
Gretchen S. Schuette , Salem	2008
Howard F. Sohn , Roseburg	2009
Tony C. Van Vliet , Corvallis	2009
Gerry W. Blakney , Monmouth	2007

Officers of the System

George P. Pernsteiner, M.P.A.
Chancellor

Jay D. Kenton, Ph.D.
Vice Chancellor for Finance and Administration

Susan Weeks, M.S.
Vice Chancellor for Strategic Programs and Planning

Benjamin Rawlins, J.D.
General Counsel and Deputy to the Chancellor

Ryan J. Hagemann, J.D.
Secretary of the Board

The Oregon University System, organized in 1932, provides educational opportunities to young people and adults throughout the state of Oregon. Member institutions are elements of an articulated system, parts of an integrated whole.

Opportunities for general education are distributed as widely as possible throughout the state, while specialized, professional, and technical programs are centered at specific institutions.

Members of the Oregon University System

Eastern Oregon University
La Grande

Oregon Institute of Technology
Klamath Falls

Oregon State University
Corvallis

Portland State University
Portland

Southern Oregon University
Ashland

University of Oregon
Eugene

Western Oregon University
Monmouth

Oregon Health & Science University*
Portland

The Oregon University System Chancellor's Office provides coordination and service to assure that a broad-based continuing education program is available through the member institutions.

*Affiliated

Institutional Executives

Daniel O. Bernstine, LL.M.

President
Portland State University

Khosrow Fatemi, Ph.D.

President
Eastern Oregon University

Martha Anne Dow, Ph.D.

President
Oregon Institute of Technology

Edward Ray, Ph.D.

President
Oregon State University

Elisabeth Zinser, Ph.D.

President
Southern Oregon University

Dave Frohnmayer, J.D.

President
University of Oregon

John P. Minchan, Ph.D.

Interim President
Western Oregon University

Portland State University

Faculty members are listed with their programs. Academic faculty are listed starting on . The dates in parentheses indicate the beginning of academic service at Portland State University. The earliest date shown is 1955, the year in which Portland State became a degree-granting institution. The faculty listings were compiled in February 2006 and may not include changes and appointments made after that time.

Office of the President

Daniel O. Bernstine (1997) LL.M.
President. LL.M. 1975 University of Wisconsin Law School.

Roderic C. Diman (1960) Ph.D.
Special Assistant to the President; Professor of Spanish. Ph.D. 1971 University of Wisconsin.

Amy Ross (1993) B.A.
Executive Assistant to the President. B.A. 1994 Portland State University.

Affirmative Action and Equal Opportunity

Burton Christopherson (2001) B.A.
Director of Affirmative Action and Equal Opportunity. B.A. 1971 Creighton University.

A.J. Arriola (2005) M.A.
AA/EO Officer

Elaine D. Cohn (2000) M.S.
Associate Director of Affirmative Action and Equal Opportunity. M.S. 2000 Portland State University

Ruth M. Toba (2000) B.A.
Program Administrator.
B.A. 1972 Beloit College.

Government Relations

Deborah Murdock (1993) M.A.
Assistant to the President for Government Relations. M.A. 1981 University of Oregon.

Jennifer Williamson (2004) J.D.
Government Relations Associate. J.D. 2001 Willamette University

Academic Affairs Office of the Provost

Roy W. Koch (1982) Ph.D., P.E.
Provost; Professor of Civil Engineering and Environmental Sciences. Ph.D. 1982 Colorado State University.

Terrel L. Rhodes (2000) Ph.D.
Vice Provost for Curriculum and Undergraduate Studies; Professor of Public Administration. Ph.D. 1980 University of North Carolina, Chapel Hill.

Center for Academic Excellence

Martha Balslem (1997) Ph.D.
Interim Director, Center for Academic Excellence; Associate Professor of University Studies. Ph.D. 1985 Indiana University.

Kevin Kecskes (2002) Ed.M.
Director for Community-Based Learning. Ed.M. 1994 Harvard University.

Amy Spring (1997) M.P.A.
Assistant Director Community-Based Learning. M.P.A. 1997 Portland State University.

Janelle Voegelé (1997) M.A.
Development Program Coordinator. M.A. 1999 Portland State University.

Extended Studies

Michael Burton (2003) M.A., M.Ed.
Vice Provost, Extended Studies. M.Ed. 1971 University of Portland.

Cheryl Livneh (1987) Ed.D.
Associate Vice Provost, Extended Studies Director, Continuing Education, Graduate School of Education. Ed.D. 1986 Boston University.

William Prows (2004) B.S.
Director, Outreach and Market Development. B.S. 1974 University of Oregon.

Bee Jai Repp (1996) Ph.D.
Director, Extended Campus Programs, Salem Center. Ph.D. 1997 Oregon State University.

Glen Sedivy (1994) M.B.A.
Assistant Vice Provost, Extended Studies. M.B.A. 1981 University of Oregon.

Victor Walsh (1998) M.P.A.
Director, Professional Development Center. M.P.A. 1985 Harvard University.

Graduate Studies and Research

William H. Feyerherm (1990) Ph.D.
Vice Provost for Research and Graduate Studies; Professor of Social Work. Ph.D. 1977 State University of New York, Albany.

Nancy M. Koroloff (1973) Ph.D.
Interim Associate Vice Provost for Research and Graduate Studies; Professor of Social Work. Ph.D. 1985 University of Oregon

Institutional Research and Planning

Kathi A. Ketcheson (1985) Ph.D.
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Educational Equity Programs and Services

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Information and Academic Support Center

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Athletics

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Dalton Miller-Jones (1992) Ph.D. Professor of Psychology. Ph.D. 1973 Cornell University.

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- Shafiqur Rahman** (1986) Ph.D.
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Management

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- Alan M. Cabelly** (1980) Ph.D.
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- Robert W. Eder** (1991) D.B.A.
Professor of Business Administration. D.B.A. 1982 University of Colorado.
- Brenda Eichelberger** (1998) M.B.A.
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- Berrin Erdogan** (2002) Ph.D.
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- R. Scott Marshall** (2000) Ph.D.
Assistant Professor of Business Administration. Ph.D. 2000 University of Oregon.
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- David Raffo** (1995) Ph.D.
Associate Professor of Business Administration. Ph.D. 1995 Carnegie Mellon University.
- Neil Ramiller** (1999) Ph.D.
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- Rohit Rampal** (2001) Ph.D.
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- Ellen L. West** (1982) Ph.D.
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- Lewis N. Goslin** (1968) Ph.D.
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- William A. Manning** (1969) Ph.D.
Professor Emeritus of Business Administration. Ph.D. 1970 University of Oregon.
- Roger L. Moseley** (1967) Ph.D.
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- Leonard F. Robertson** (1964) Ed.D.
Professor Emeritus of Business Administration. Ed.D. 1965 Colorado State College.
- Richard J. Robinson** (1962) D.B.A.
Professor Emeritus of Business Administration. D.B.A. 1966 University of Washington.
- Grover W. Rodich** (1966) Ph.D.
Professor Emeritus of Business Administration. Ph.D. 1973 University of Oregon.

Marketing

Faculty

- Don L. Dickinson** (1998) M.B.A.
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- Robert R. Harmon** (1979) Ph.D.
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- Joanne M. Klebba** (1985) Ph.D.
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- Charla Mathwick** (1998) Ph.D.
Assistant Professor of Business Administration. Ph.D. 1997 Georgia Institute of Technology.
- Alan J. Resnik** (1976) Ph.D.
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- Michael Sisavic** (1992) Ph.D.
Assistant Professor of Business Administration. Ph.D. Portland State University.
- L. P. Douglas Tseng** (1988) Ph.D.
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- Ramaprasad Unni** (2000) Ph.D.
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- Jack L. Taylor Jr.** (1962) M.B.A.
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Graduate School of Education

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Dean, Graduate School of Education. Ph.D. 1980 Indiana State University, Terre Haute.

Faculty

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Maseeh College of Engineering and Computer Science

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Department of Civil and Environmental Engineering

Faculty

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Regional Research Institute for Human Services

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University of Manchester Institute of Science
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Child Welfare Partnership

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Mark O. Hatfield School of Government

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Emeriti Faculty

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Systems Science Ph.D. Program

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University of Michigan.

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Professor Emerita of Systems Science. Ph.D.
1973 University of Michigan.

Appendix

ALTERNATIVE MEANS OF MEETING GPA REQUIREMENT

Students who do not meet the 3.00 GPA or 1000 SAT (Critical Reading and Math)/21 ACT composite requirement may be admitted based on a combination of GPA and test scores, as seen below.

GPA	SAT (CR+M)/ ACT
2.99	800 / 16
2.98	800 / 16
2.97	810 / 16
2.96	820 / 16
2.95	820 / 16
2.94	830 / 17
2.93	840 / 17
2.92	840 / 17
2.91	850 / 17
2.90	850 / 17
2.89	860 / 17
2.88	870 / 18
2.87	870 / 18
2.86	880 / 18
2.85	880 / 18
2.84	890 / 18
2.83	900 / 18
2.82	900 / 18
2.81	910 / 19
2.80	920 / 19
2.79	920 / 19
2.78	930 / 19
2.77	930 / 19
2.76	940 / 19
2.75	950 / 19
2.74	950 / 20
2.73	960 / 20
2.72	970 / 20
2.71	970 / 20
2.70	980 / 20
2.69	980 / 20
2.68	990 / 20

CREDIT BY EXAMINATION

I. Portland State University Courses

Prerequisites for Credit by Examination (PSU courses)

1. Students must be formally admitted to Portland State, and
2. Be currently registered or have completed one Portland State course.

Guidelines governing Credit by Examination (PSU courses)

1. Not all courses in all departments are open to challenge. Each academic unit decides which of its courses are available to undergraduates for credit by examination. The determination by the department is final. No courses numbered 199, 299, 399, or 401 to 410 inclusive are eligible for credit by examination.
2. Students should contact the appropriate departments, college, or schools to determine the availability of particular courses for credit by examination.
3. The examinations administered vary according to the departments, college, or schools which administer them, and may include midterm and/or final examinations in current courses or special examinations designed for students "challenging" courses whether or not the courses are currently being offered.
4. Credit earned by examination may not be received in a course which:
 - a. Duplicates credit previously earned by a student, or
 - b. Is more elementary, as determined by departmental, college, or school regulations, than a course in which the student has already received credit.
5. A student may attempt to acquire credit by examination only once for any course.
6. A student who has taken but not passed a course may subsequently attempt credit in that course by examination. Only one such attempt is permitted. In the event of failure, results will not be recorded on a student's academic record. Should an examination not be passed, credit can be obtained by repeating the course.
7. In assigning grades for credit by examination, the departments, college, or schools determine whether to use an undifferentiated (P for pass or NP for no pass) or a differentiated grade, from A (excellent) to F (failing).
8. Credit by examination does not count toward residence credit.
9. Credit by examination is not governed by the GPA Repeat Policy.

Application for Credit by Examination (PSU courses) and cost

1. Students wishing to take examinations for Portland State courses may obtain an application with detailed instructions from the Office of Admissions, Registration and Records (Neuberger Hall lobby).

2. The fee for credit by examination is currently \$80 per course examination. Fee subject to change.

II. CLEP Examinations

CLEP (College-Level Examination Program) includes nationally normed examinations. CLEP has (1) subject matter examinations, and (2) general examinations.

A table of CLEP examinations accepted by PSU is available on page 364.

Eligibility for CLEP. CLEP subject or general examinations may be taken prior to entering the University. If the individual passes a CLEP examination, the University accepts the amount of credit indicated in the CLEP table, but only after admission is granted and the student is (or has been) enrolled in Portland State courses.

Qualifications for CLEP Transfer.

Students who have taken CLEP examinations prior to entering Portland State may transfer such credit provided they have passed the examination with scores at or above the minimum accepted by PSU and provided the University has approved the examinations for credit.

Application for credit before coming to PSU.

Students may request an official transcript be sent to Portland State University, Office of Admissions, Registration and Records. The request should be sent to College Examinations Entrance Board, Attention: CLEP Transcript Service, Princeton, NJ 08540. The transcript request should include Social Security number, date and place of test and fee. Fees are set by the Educational Testing Services and are subject to change. Phone request number is (609) 771-7865.

Where to apply for CLEP

Examinations. Admitted students planning to take CLEP examinations should apply for them at least one month in advance with the Testing Office of PSU's Counseling and Psychological Services (M342 Smith Memorial Student Union) or with other recognized CLEP testing centers. The Testing Office supplies descriptive brochures and other information on CLEP examinations.

The Testing Office also supplies information and administers CLEP examinations to nonadmitted or nonenrolled students. Fees for CLEP examinations are set by the Educational Testing Services and are subject to change.

CLEP Examinations approved at Portland State University

EXAMINATION	CREDITS APPROVED	PASSING	NOTES
Humanities	Fulfills 9 credits of non-major requirements or nine lower division credits	50	Closed to students with more than 90 credit hours Arts & Letters (LD) – 9 credits
Natural Science	Fulfills 9 credits of non-major requirements	50	Closed to students with more than 90 credits Social Science (LD) – 9 credits
Social Science/History	Fulfills 9 credits of non-major requirements or 9 lower division credits	50	Closed to students who have earned 9 credits in the social sciences
SUBJECT/EXAMINATION			
Arts and Letters			
French	12	50	Satisfies FR 101, 102, 103†
French	12	62	Satisfies FR 201, 202, 203†
German	12	50	Satisfies Ger 101, 102, 103†
German	12	60	Satisfies Ger 201, 202, 203†
Spanish	12	50	Satisfies Span 101, 102, 103†
Spanish	12	66	Satisfies Span 201, 202, 203*†
Business Administration			
Introductory	8	50	Satisfies BA 211, 213
Science			
Biology	0	49	Waives Bi 251, 252, 253
Calculus	8	50	Satisfies 251, 252
College Algebra	4	50	Satisfies Math 111, credit given
College Algebra/	4	50	Satisfies Math 112, credit given
General	12	50	Satisfies Ch 221, 222, 223
Social Science			
American	8	50	Satisfies PS 101, 102
General	8	50	Satisfies Psy 200, 204
Introductory	4	50	Satisfies Ec 201
Introductory	4	50	Satisfies Ec 202
Sociology	0	50	Waives prerequisite for upper

† Language Exam credit is limited to either first or second year, depending on score.
NOTE: Credits and course equivalencies in the table may change.

Relation between CLEP and Advanced Placement (AP) Program. Students cannot acquire duplicate credit through CLEP in the subjects for which they have acquired Advanced Placement credit. To the extent that a student's high school does not offer Advanced Placement work, CLEP becomes a supplement or substitute for Advanced Placement credit.

III. Advanced Placement Program

Students who complete college-level work in high school under the Advanced Placement Program sponsored by the College Entrance Examination Board and who receive creditable scores in examinations administered by that board may, after admission to PSU, be granted credit toward a bachelor's degree in comparable college courses. Students may request their

official transcript by writing to the Advanced Placement Program, PO Box 6671, Princeton, NJ 08541-6671.

Credit awarded for Advanced Placement. The amount of credit a student may receive for Advanced Placement Examinations and the scores required for the award of credit vary according to department as described below under individual department headings. Important: Any student with a score of four or five (or three in mathematics) must arrange an interview with the department chair for purposes of further guidance.

Art history. A score of 3 or better will confer 9 credits in ArH 204, 205, and 206.

Biology. A student with a score of 4 or 5 will be permitted to enroll in advanced courses in biology with waiver of the introductory courses. This waiver does not

reduce the total number of credits required in biology courses for a major but gives the student opportunity to gain greater depth and scope.

Chemistry. A score of 4 or 5 qualifies science, health science, and engineering majors to enroll in Ch 223 and 229. A creditable grade in these two courses will confer 10 credits in Ch 221, 222, 227, and 228. A score of four or five will entitle the nonmajor to 9 credits in chemistry, unassigned; these 9 credits will count toward the distribution requirements in science.

Computer science. A score of 4 or 5 will lead to a conference with an adviser to determine whether credit will be conferred for CS 161 and CS 162.

Economics. A score of 3 or higher in Advanced Placement Micro will lead to credit for Ec 201 (Intro Micro) and a score of 3 or higher in Advanced Placement Macro, will lead to credit for Ec 202 (Intro Macro).

English. A score of 4 or 5 on the Advanced Placement English Literature and Composition examination will confer a total of 15 credits in Wr 121, Eng 104, 105, 106. A score of 3 will confer 3 credits in Wr 121. A score of 3, 4, or 5 on the Advanced Placement English Language and Composition examination will confer 9 credits: 3 credits in Wr 121 and 6 unassigned credits in lower-division writing.

European history. A score of 4 or 5 confers 8 credits in Hst 101 and 102, and 4 credits in Hst 103.

Foreign languages. French, German, Latin, and Spanish Language Test: A score of 3 confers 12 credits for the first year sequence (101, 102, 103); a score of 4 confers 12 credits for the second-year sequence (201, 202, 203), and 3 additional upper-division foreign language elective credits for a total of 15 credits; and a score of 5 confers 12 credits for the second-year sequences (201, 202, 203), plus 8 upper-division credits (301, 302, 303), for a total of 20 credits.

Spanish Literature. A score of 4 or 5 confers 4 credits in upper-division Spanish.

Government and Political Science. A score of 4 or 5 confers 4 credits in PS 101.

Mathematics. *Calculus AB:* A score of 4 or 5 confers 8 credits in Mth 251, 252. A score of 3 confers 4 credits in Mth 251. *Calculus BC:* A score of 4 or 5 will confer 12 credits in Mth 251, 252, 253. A score of 3 will confer 8 credits in Mth 251, 252.

Music. *Music Theory:* A score of 4 or 5 confers 12 credits in Mus 111, 112, 113; a score of 3 confers 4 credits for Mus 111.

Music History/Literature: A score of 4 or 5 confers 8 credits for Mus 201, 202.

Physics B. A score of 4 or 5 confers 12 credits in Physics 201, 202, 203, 214, 215, 216.

Physics C. A score of 4 or 5 confers 8 credits in Physics 221, 214, 222, 215.

Statistics. A score of 3, 4, or 5 confers 4 credits in Stat 243.

United States history. A score of 4 or 5 on the examination confers 8 credits in Hst 201 and 202.

World History. A score of 4 or 5 confers 8 unassigned credits in lower-division history.

IB Exam	Cr†	PSU Course Equivalency†
Art	9	Art (LD)
Biology	15	Biology 251, 252, 253
Chemistry	12	Chemistry (LD)
Economics	8	Economics 201, 202
Geography	4	Geography 230
History of the Americas	4	History (LD)
History of East Asia	4	History (LD)
History of Europe	4	History (103)
Lang. A: English Lang. B: English	15	WR 121; ENG 104, 105, 106
Lang. A: Other	3	Foreign Language
Lang. B: Other	15	First Year Language
Mathematics	12	Mathematics 251, 252, 253
Music	5	Music 110 (4), MUS (LD)—1cr.
Physics	12	Physics 201, 202, 203
Psychology	8	Psychology 200, 204

IV. International Baccalaureate

† Note: Credits and course equivalencies in the table may change.

The IB exams are evaluated in much the same way as Advanced Placement exams.

- ◆ Submit an official IB transcript directly from IB North America, 475 Riverside Dr., 16th floor, New York, NY, 10115. Additional student records, where needed, will be requested.
- ◆ Credit will be awarded for higher level exams only. Credit will not be awarded for subsidiary level exams, the theory of knowledge, or extended essays.
- ◆ Credit will be awarded only for a score of 5 or higher.

Credit for International Baccalaureate (IB) examinations is awarded only for a score of 5 or higher, as follows: Residence Classification Policy and Procedures In Oregon, as in all other states, tuition at publicly supported four-year universities is higher for nonresident students than for resident students. The rules used in determining residency seek to ensure that only bona fide Oregon residents are assessed the resident fee. Those rules—Oregon Administrative Rules, Chapter 580,

Division 10 - Board of Higher Education—appear in “Notice to Nonresidents of the State of Oregon.”

Only duly authorized residency officers have authority to apply and interpret these rules and procedures. No other indication or determination of residency by any other institutional office, department, program, or staff represents the official institutional determination of residency.

Here is a summary of a few key considerations in determining classification as a resident for tuition purposes.

1. Establishment of a domicile and predominant physical presence in Oregon for a period of 12 months or more prior to the beginning of the term for which residency is sought.
2. Financial dependence on an Oregon resident or financial independence.
3. Primary purpose for being in Oregon other than to obtain an education.
4. Nature and source of financial resources.
5. Various other indicia of residency (e.g., ownership of Oregon living quarters, permanent Oregon employment, payment of Oregon income taxes).

Note: These key considerations are for quick reference purposes only. For a complete explanation of these factors, refer to the rules in “Notice to Nonresidents of the State of Oregon” (the companion document to this Guide).

To be considered for classification as a resident, certain procedures and materials must be submitted to the institutional residency officer in a complete and timely manner.

1. Obtain and complete the Residence Information Affidavit, which is available from the institutional residency officer.
2. Consult with the residency officer on the provision of all the required supportive documents and materials.
3. Submit the affidavit and all other required materials and documents by the last day to register for the term in which resident status is sought.

Residency Classification Appeals

Any person may appeal an institutional residency classification decision within ten (10) days of the date of mailing or other notification of the decision. The appeal to the OUS Interinstitutional Residency Committee (IRC) must be in writing and filed with the institutional residency officer.

The decision of the IRC may be appealed to the Chancellor for Academic Affairs in writing within ten (10) days of notification of the IRC decision. The decision of the Chancellor is final.

Further Information

Persons interested in further information on or assistance with residency classification should contact the institutional residency officer at the institution where residency classification is sought.

OREGON BOARD OF HIGHER EDUCATION ADMINISTRATIVE RULES

These are the residency rules of the Board of Higher Education currently in effect.

Definitions

580-010-0029

For the purpose of OAR 580-010-0030 through 580-010-0045, the following words and phrases mean:

1. “Domicile” is a person’s true, fixed, and permanent home and place of habitation. It is the place where a person intends to remain and to which the person expects to return when the person leaves without intending to establish a new domicile elsewhere. In order to establish a domicile in Oregon, a person must maintain a predominant physical presence in Oregon for 12 consecutive months after moving to the state.
2. A “financially independent person” is a person who, at the time of application for residency status:
 - a. declares himself or herself to be financially independent;
 - b. has not been claimed as a dependent during the immediately preceding tax year, and will not be claimed as a dependent during the current tax year, on the federal or state income tax returns of any other person; and
 - c. has not received in the immediately preceding calendar year, and will not receive during the current calendar year, one-half or more of his or her support, in cash or in kind, from another person or persons, except for support received from his or her spouse.
3. A “financially dependent person” is a person who, at the time of application for residency status:
 - a. declares himself or herself to be financially dependent; and
 - b. has been claimed as a dependent on the federal and state income tax returns of another person during the immediately preceding tax year.

Determination of Residence

580-010-0030

1. For purposes of admission and instruction fee assessment, OUS institutions shall classify a student as Oregon resident or nonresident. In determining resident or nonresident classification, the primary issue is a person’s intent in coming to Oregon. Intent is inferred from a person’s

conduct and history as they relate to the requirements of these residency rules. If a person is in Oregon primarily for the purpose of obtaining an education, that person will be considered a nonresident. It is possible for an individual to qualify as a resident of Oregon for purposes of voting or obtaining an Oregon driver's license and not meet the residency requirements established by these rules.

2. An Oregon resident is a financially independent person who, prior to the term for which Oregon resident classification is requested, has both:

- a. established and maintained a domicile in Oregon as provided under OAR 580-010-0029(1) for 12 consecutive months; and
- b. during that period, has been primarily engaged in activities other than those of being a college student.

3. A student may be considered primarily engaged in educational activities regardless of the number of hours for which the student is enrolled. However, a student who is enrolled for more than 8 hours in any semester or quarter during the 12-month period referred to in section (2) of this rule shall be presumed to be in Oregon for primarily educational purposes. Such period of enrollment shall not be counted toward the establishment of a bona fide domicile of 12 consecutive months in this state unless the student proves, in fact, establishment of a bona fide domicile in this state primarily for purposes other than educational.

4. An Oregon resident is also a financially dependent person who is claimed as a dependent by another person who has both:

- a. established and maintained an Oregon domicile as provided under OAR 580-010-0029(1) for 12 consecutive months; and
- b. during that period, has been primarily engaged in activities other than those of being a college student.

5. A financially dependent person who is claimed as a dependent by another person who has not established and maintained an Oregon domicile shall be presumed to be a non-resident. This presumption may be overcome by evidence of the student's long-standing presence in Oregon and demonstration of other factors under OAR 580-010-0031.

6. The criteria for determining Oregon resident classification shall also be used to determine whether a person who has moved from Oregon has established a non-Oregon residence.

7. If institution records show that the residence of a student or the person upon whom the student is dependent is outside

of Oregon, the student shall continue to be classified as a nonresident until entitlement to resident classification is shown.

The burden of showing that the residence classification should be changed is on the student requesting the change.

8. Notwithstanding section (4) of this rule, a student who is financially dependent on a non-Oregon resident may nonetheless be considered an Oregon resident if the student resides in Oregon for at least 12 consecutive months with a parent or legal guardian who has both:

- a. established and maintained an Oregon domicile under OAR 580-010-0029(1) for 12 consecutive months; and
- b. during that period, has been primarily engaged in activities other than those of being a college student.

Residency Consideration Factors 580-010-0031

1. The following factors, although not necessarily conclusive or exclusive, have probative value in support of a claim for Oregon resident classification:

- a. Reside in Oregon for 12 consecutive months prior to the beginning of the term for which resident classification is sought and during that period be primarily engaged in activities other than those of a college student;
- b. Reliance upon Oregon resources for financial support;
- c. Domicile in Oregon of persons legally responsible for the student;
- d. Acceptance of an offer of permanent employment in Oregon; and
- e. Ownership by the person of his or her living quarters in Oregon.

2. The following factors, standing alone, do not constitute sufficient evidence to effect classification as an Oregon resident:

- a. Voting or registration to vote;
- b. Employment in any position normally filled by a student;
- c. The lease of living quarters;
- d. Admission to a licensed practicing profession in Oregon;
- e. Automobile registration;
- f. Public records, for example, birth and marriage records, Oregon driver's license;
- g. Continuous presence in Oregon during periods when not enrolled in school;
- h. Ownership of property in Oregon or the payment of Oregon income or other Oregon taxes; or
- i. Domicile in Oregon of the student's spouse.

3. Reliance upon non-Oregon resources for financial support is an inference of residency in another state.

Evidence of Financial Dependency 580-010-0033

1. In determining whether a student is financially dependent, a student must provide:

- a. Evidence of established domicile as provided under OAR 580-010-0029(1) of the person claiming the student as a dependent; and
- b. The identification of the student as a dependent on the federal and state income tax returns of the person claiming the student as a dependent. Additional documentation to substantiate dependency during the current calendar year may be required at a later time if deemed necessary by the institution.

c. A student who provides evidence that he or she is a financially dependent person under these rules shall not be required to establish a 12-month domicile prior to classification of resident status, provided such a student may not be classified as a resident while receiving financial assistance from another state or state agency for educational purposes.

Residence Classification of Armed Forces Personnel 580-010-0035

1. For purposes of this rule, members of the armed forces means officers and enlisted personnel of:

- a. The Army, Navy, Air Force, Marine Corps, and Coast Guard of the United States;
- b. Reserve components of the Army, Navy, Air Force, Marine Corps, and Coast Guard of the United States;
- c. The National Guard of the United States and the Oregon National Guard.

2. Notwithstanding OAR 580-010-0030, active members of the armed forces and their spouses and dependent children shall be considered residents for purposes of the instructional fee if the members:

- a. Reside in this state while assigned to duty at any base, station, shore establishment, or other facility in this state;
- b. Reside in this state while serving as members of the crew of a ship that has an Oregon port of shore establishment as its home port or permanent station; or
- c. Reside in another state or a foreign country and file Oregon state income taxes no later than 12 months before leaving active duty.

3. An Oregon resident entering the armed forces retains Oregon residence classification until it is voluntarily relinquished.

4. An Oregon resident who has been in the armed forces and assigned on duty outside of Oregon, including a person

who establishes residency under section (2)(c) of this rule, must, within a reasonable time, demonstrate an intent to retain classification as an Oregon resident. Such intent may be shown by returning to Oregon within six months after completing service in the armed forces.

5. A person who continues to reside in Oregon after separation from the armed forces may count the time spent in the state while in the armed forces to support a claim for classification as an Oregon resident.

6. The dependent child and spouse of a person who is a resident under section (2) of this rule shall be considered an Oregon resident. "Dependent child" includes any child of a member of the armed forces who:

- a. Is under 18 years of age and not married, otherwise emancipated or self-supporting; or
- b. Is under 23 years of age, unmarried, enrolled in a full-time course of study in an institution of higher learning, and dependent on the member for over one-half of his/her support.

Residence Classification of Members of Oregon Tribes 580-010-0037

1. Students who are enrolled members of federally recognized tribes of Oregon or who are enrolled members of a Native American tribe which had traditional and customary tribal boundaries that included parts of the state of Oregon or which had ceded or reserved lands within the state of Oregon shall be assessed resident tuition regardless of their state of residence.

2. For purposes of this rule, the federally recognized tribes of Oregon are:

- a. Burns Paiute Tribe;
- b. Confederated Tribes of Coos, Lower Umpqua and Siuslaw;
- c. Confederated Tribes of Grand Ronde Community of Oregon;
- d. Confederated Tribes of Siletz Indians of Oregon;
- e. Confederated Tribes of the Umatilla Indian Reservation;
- f. Confederated Tribes of the Warm Springs Indian Reservation;
- g. Coquille Indian Tribe;
- h. Cow Creek Band of Umpqua Indians;
- i. Klamath Tribes.

3. For purposes of this rule, the Native American tribes which had traditional and customary tribal boundaries that included parts of the state of Oregon or which had ceded or reserved lands within the state of Oregon are:

- a. CALIFORNIA: Benton Paiute Tribe, Big Bend Rancheria, Big Lagoon Rancheria, Blue Lake Rancheria,

Bridgeport Indian Colony, Cedarville Rancheria, Fort Bidwell Indian Tribe, Hoopa Valley Tribe, Karuk Tribe of California, Likely Rancheria, Lookout Rancheria, Lytton Rancheria, Melochundum Band of Tolowa Indians, Montgomery Creek Rancheria, Pit River Tribe, Quartz Valley Indian Community, Redding Rancheria, Roaring Creek Rancheria, Smith River Rancheria, Susanville Rancheria, Tolowa-Tututni Tribe, Winnemucca Colony, XL Ranch, Yurok Tribe.

b. IDAHO: Nez Perce Tribe of Idaho, Shoshoni-Bannock Tribes.

c. NEVADA: Duck Valley Shoshone-Paiute Tribes, Fallon Paiute-Shoshone Tribe, Fort McDermitt Paiute-Shoshone Tribe, Lovelock Paiute Tribe, Pyramid Lake Paiute Tribe, Reno-Sparks Indian Colony, Summit Lake Paiute Tribe, Walker River Paiute Tribe, Winnemucca Indian Colony, Yerington Paiute Tribe.

d. OKLAHOMA: Modoc Tribe of Oklahoma.

e. WASHINGTON: Chehalis Community Council, Colville Confederated Tribes, Quinalt Indian Nation, Shoalwater Bay Tribe, Yakama Indian Nation.

4. A student seeking to be assessed resident tuition under the provisions of this rule shall submit, following procedures prescribed by the OUS institution where the student seeks to enroll, a photocopy of tribal enrollment which documents tribal membership.

Residence Classification of Non-Citizens 580-010-0040

A person who is not a citizen of the United States may be considered an Oregon resident if the person qualifies as a resident under OAR 580-010-0030 and is one of the following:

1. A lawful permanent resident. The date of approval of lawful permanent residency shall be the earliest date upon which the 12-month residency requirements under OAR 580-010-0030 may begin to accrue.
2. An immigrant granted refugee or political asylum in the United States. The date of approval of political asylum or refugee status shall be the earliest date upon which the 12-month residency requirements under OAR 580-010-0030 may begin to accrue.

3. A person holding one of the following non-immigrant visa classifications: A, E, G, H-1B, H-1C, the spouse or child of a person holding an H-1B or H-1C visa, I, K, L, NATO, O, R, S, T, TN, U, or V. The date of the issuance of a visa for one of these classifications shall be the earliest date upon which the 12-month residency require-

ments under OAR 580-010-0030 may begin to accrue. A person possessing a non-immigrant or temporary visa that is not identified under this rule shall not be considered an Oregon resident.

Changes in Residence Classification 580-010-0041

1. If an Oregon resident student enrolls in an institution outside of Oregon and later seeks to re-enroll in an OUS institution, the residence classification of that student shall be re-examined and determined on the same basis as for any other person.

2. A financially dependent student who is dependent on a person who establishes a permanent Oregon residence as defined in OAR 580-010-0030(2) during a term when the dependent student is enrolled at an OUS institution may register as a resident at the beginning of the next term.

3. Once established, classification as a resident continues so long as the student remains in continuous academic year enrollment in the classifying institution.

4. A person who seeks classification as a resident under these rules shall complete and submit a notarized Residence Information Affidavit. The affidavit and all required supportive documents and materials must be submitted by the last day to register for the term in which resident status is sought.

5. No OUS institution is bound by any determination of residency except by duly authorized officials under procedures prescribed by these rules including timely submittal of the notarized affidavit.

Review of Residence Classification Decisions by IRC 580-010-0045

1. An interinstitutional residency committee (IRC) is established consisting of the officers determining student residence classification at OUS institutions and a member of the Chancellor's staff appointed by the Chancellor. The member of the Chancellor's staff shall serve as chairperson. A majority of the members of the Committee shall constitute a quorum. A majority of a quorum may make decisions.

2. Residence cases of unusual complexity, especially where there may be conflict of rules, may be referred by an institution residence classification officer to the IRC for decision.

3. Any person who is aggrieved by the institution residence classification may, within ten (10) days of the date of mailing or other service of classification decision, appeal the classification to the IRC. The appeal must be in writing and shall be filed with the institution. An aggrieved person may supply written statements to

the IRC for consideration in reviewing the case and may also make an oral presentation to the IRC on a date to be scheduled by the IRC. The decision of the IRC shall be final unless appealed.

4. A person dissatisfied with the IRC decision may, within ten days of the date of the mailing or other service of the IRC decision, appeal the IRC decision to the Chancellor for Academic Affairs or designee. An appeal to the Chancellor shall be in writing only. The Chancellor's decision shall be final.

5. A person granted a meritorious hardship exception to residency under this rule prior to July 1, 1990, shall not lose the exception solely because of the repeal of the exception authorization.

Residents Under WICHE 580-010-0047

A certification officer, designated by the Board, shall determine the residence classification of any person seeking certification as an Oregon resident, pursuant to the terms of the WICHE Compact. Any person dissatisfied with the decision of the certification officer may appeal to the IRC. The decision of the IRC shall be final unless further appeal is made to the Chancellor for Academic Affairs pursuant to OAR 580-010-0045(4).

PAYMENT OF STUDENT FEES

Payment of Nonresident Instruction Fee 580-10-080

1. All students who are classified as non-residents shall pay a non-resident fee.
2. Refunds of the nonresident fee may be granted if the student shows that the classification previously assigned was in error, but no such refund shall be made unless the student applies and submits all supporting information for residency status prior to the last day to register for the term in which the student seeks change of status.

Waiver of Nonresident Instruction Fee 580-10-081

1. Notwithstanding the provisions of rule 580-10-080, the following nonresident students shall be permitted to pay instruction fees at the same rates as Oregon resident students:
 - a. Students who are residents of the State of Washington attending an Oregon institution and who are granted a tuition waiver under the terms of reciprocity agreement;
 - b. All undergraduates attending Eastern Oregon State College;
 - c. Graduate students who are residents of a participating WICHE state enrolled in a WICHE Regional Graduate Program or a WICHE Northwest doctoral student exchange program at a Department institution; and

d. Students attending Oregon graduate or professional schools under terms of the WICHE Compact.

2. When provisions of this rule are limited to residents of specific states or counties, determination of residence in those states or counties shall be made in the same manner as for students claiming Oregon residence.

Student Exchanges 580-10-085

1.a. Under the WICHE Student Exchange Program, certification of students as Oregon residents for purposes of attending institutions not under Board control or in other states shall be guided by rules set forth in Division 10. In order to be considered for WICHE certification, the student's completed application must be received by the certifying officer on or before October 15 of the year preceding admission. An application received after that date in an envelope postmarked not later than October 15 will be deemed to have been received on the 15th.

Residency shall be determined as of the date of the application for WICHE certification, not as of the date of expected admission or registration to an institution.

b. Persons applying for WICHE certification must be certified as Oregon residents and placed in ranked preference order within each program. Ranked preference order is determined by a score based on the grade point average of all college work plus .25 times the number of years of residence in Oregon up to a maximum of ten years.

2.a. The department and separate institutions may enter into agreements with individual institutions in other states or other countries whereby resident students specified by name in the Oregon institutions may transfer to the other institution, and an equal number of students specified by name from the other institution may transfer to the Oregon institution with a reciprocal waiving of additional fees ordinarily assessed to nonresident students in both institutions.

b. The recommendation for a student exchange program, together with a copy of the proposed agreement between the institutions, shall be approved by the Chancellor or designee before the exchange program is undertaken. Further, the program recommendation and the proposed agreement between institutions shall set forth the reasons why the exchange would be of particular benefit to the students in their chosen study programs and specify: fees to be paid by incoming and outgoing students; student responsibility for costs of transportation, housing,

books, board and room, and other incidentals; responsibility of institutions to assist students in obtaining housing, counseling, and interpreters; procedures to be followed in state entitlement funding and counting credit hours; action to be taken if students do not regularly participate in the academic program being pursued, and procedures for providing transcripts.

c. If an approved agreement provides for exchange of equal numbers of students, then unforeseen circumstances which later might cause a student to withdraw from the program shall not void the arrangements agreed upon by the two institutions.

d. Attendance at a Department institution as an exchange student from another state or country cannot be used in establishing residence.

3. Notwithstanding any other rule, and effective fall term of the 1989-90 academic year, a Department institution may provide that a vacant WICHE opening may be occupied by a nonresident, non-WICHE student who agrees not to seek residency status for the duration of the student's degree program and who agrees to pay a fee equal to the nonresident tuition fee for the duration of that program.

Enrollment of Spouse and Dependent Children 580-10-086

1. The spouse and dependent children of regular Department staff members with a full-time equivalent of at least .50 may enroll as students at resident fee rates in Department institutions.

2. The spouse and dependent children of Department visiting instructors from other countries or other states with a full-time equivalent of at least .50 may enroll in Department institutions at resident fee rates during the terms that the parent, guardian, or spouse is serving a Department institution as a visiting instructor.

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