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Bulletin: General Catalog Issue 2013-2014

Portland State University

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Portland State University campus map



CAMPUS BUILDINGS

- Academic & Student Recreation Center (ASRC)
- Art Building (AB)
- The Broadway (BHB)
- Business Administration (BA)
- Campus Public Safety (CPSO)
- Cramer Hall (CH)
- East Hall (EH)
- Education, Graduate School of (ED)
- Engineering Building (EB)
- Engineering & Computer Science Annex (CECS)
- Extended Studies Building (XSB)
- Fifth Avenue Cinema (CIN)
- Fifth Avenue Parking Lot
- Fourth Avenue Building (FAB)
- Harder House (HH)

- Harrison Street Building (HSB)
- Helen Gordon Child Development Center (HGDCDC)
- Hoffmann Hall (HOFF)
- Honors Building, University (UHP)
- Koinonia House (KHSE)
- Lincoln Hall (LH)
- Market Center Building (MCB)
- Market Square Building (MSB)
- Millar Library, Branford P. (ML, LIB)
- Native American Student and Community Center (NASCC)
- Neuberger Hall (NH)
- Parking 1 (P1)
- Parking 2 (P2)
- Parking 3 (P3)
- Peter W. Stott Center (PSC)
- Peter W. Stott Community Field

- PSU Bookstore (BOOK)
- Research Greenhouses
- Science and Education Center (SEC)
- Science Building 1 (SB1)
- Science Research and Teaching Center (SRTC)
- Shattuck Hall (SH)
- Simon Benson House (SBH)
- Smith Memorial Student Union (SMSU)
- University Center Building (UCB)
- University Place (UP)
- University Services (USB)
- University Technology Services (UTS)
- Urban Center (URBN)
- West Heating Plant (WHP)

- UNIVERSITY HOUSING**
- Blackstone (BLK)
- The Broadway (BHB)
- Joseph C. Blumel Hall (JCB)
- King Albert (KNGA)
- Montgomery Court (MONT)
- Ondine (OND)
- Parkway (PRKW)
- St. Helens (STHL)
- Stephen Epler Hall (SEH)
- Stratford (STFR)
- University Pointe
- Not pictured
- PSU Business Accelerator, Corbett Building, 2828 SW Corbett Ave.

- F4
- I7
- D2
- E2
- E4
- H8
- C4
- E2
- F2
- C3
- I-8

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 THE ARTS
www.pdx.edu/the-arts/

SCHOOL OF BUSINESS ADMINISTRATION
www.pdx.edu/sba/

GRADUATE SCHOOL OF EDUCATION
www.pdx.edu/education/

**MASEEH COLLEGE OF ENGINEERING AND
COMPUTER SCIENCE**
www.pdx.edu/cecs/

COLLEGE OF LIBERAL ARTS AND SCIENCES
www.pdx.edu/clas/

SCHOOL OF SOCIAL WORK
www.pdx.edu/ssw/

COLLEGE OF URBAN AND PUBLIC AFFAIRS
www.pdx.edu/cupa/

Undergraduate students at Portland State University may work toward a Bachelor of Arts, a Bachelor of Science, or a Bachelor of Fine Arts degree 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 15 doctoral degrees, including degrees in applied physics, applied psychology, biology, chemistry, civil engineering, computer science, education, earth, environment & society, electrical and computer engineering, mathematics education, mathematical sciences, mechanical engineering, social work and social research, and four interdisciplinary degrees in which approximately a dozen departments participate.

See page 7 for a list of the programs offered at PSU and consult the index for further information about these programs.

Academic calendar

	FALL 2013	WINTER 2014	SPRING 2014	SUMMER 2014	FALL 2014
¹ Graduate admission application priority filing dates for University application	April 1	Sept. 1, 2013	Nov. 1, 2013	Feb. 1	April 1
² International admission application priority filing dates	April 1	Oct. 1, 2013	Feb. 1, 2014	April 1	April 1
Undergraduate admission application priority filing dates	Dec. 1	Nov. 1, 2013	Feb. 1	May 1	Dec. 1
³ Advance registration begins	May 13	Nov. 12, 2013	Feb. 17	May 5	May 12
Classes begin (day and evening)	Sept. 30	Jan. 6	March 31	June 23	Sept. 29
Last day to enroll in classes, add a class, or make section changes	Oct. 11	Jan. 17	April 11	varies	Oct. 10
Last day to drop without course recorded as W	Oct. 13	Jan. 19	April 13	varies	Oct. 12
Last day of refund period	Oct. 27	Feb. 2	April 27	varies	Oct. 26
Last day to make changes in grading option	Nov. 17	Feb. 23	May 18	varies	Nov. 16
Last day to withdraw from a class	Nov. 17	Feb. 23	May 18	varies	Nov. 16
Final examinations	Dec. 9-14	March 17-22	June 9-14		Dec. 8-13
Term ends	Dec. 14	March 22	June 14		Dec. 13
Commencement			June 16		
Holidays	Nov. 11 Nov. 28-29	Jan. 20	May 26	July 4	Nov. 11 Nov. 27-28

¹Consult specific academic department for information on departmental deadlines and procedures for admission.

²Students who apply after the priority filing dates will be considered for admission if complete application documents are submitted with sufficient time to evaluate transcripts, obtain student visas and enroll for classes. Late applicants have limited scholarship opportunities.

³Advance registration beginning dates are tentative. Refer to the annual *Registration Guide* or www.pdx.edu/registration for information on registration dates, deadlines and procedures.

Programs of study

	Minor	Certificate	Bachelor's	Master's	Doctorate
Accounting		■			
Aging Services	■				
Anthropology	■		■	■	1
Applied Linguistics: Teaching English as a Second Language Revitalizing Endangered Indigenous Languages	■	■	■	■ 2	
Architecture	■		■	■	
Art: Undergraduate options: Art History; Art Practices; Drawing/Painting/ Printmaking; Graphic Design; Sculpture. Graduate options: Contemporary Art Practices with an emphasis in either Social Practice or Studio Practice. Minor options: Art History; Design Management; Drawing/Painting/Printmaking; Graphic Design; Photography; Sculpture; Time Arts.	■		■	■	
Arts and Letters			■		
Arts Studies			■		
Asian Studies		■			
Biology: Undergraduate certificate: Biotechnology	■	■	■	■	■ 3
Black Studies	■	■	■		
Business Administration: Undergraduate options: Accounting; Advertising Management; Finance; Management & Leadership; Human Resource Management; Marketing; Real Estate; Supply and Logistics Management; Food Industry Management Certificate. Graduate option: Financial Analysis, Healthcare Management.	■	■	■	■	1
Chemistry: Undergraduate option: Biochemistry	■		■	■	■ 3
Chicano/Latino Studies		■			
Child and Family Studies			■		
Civil Engineering: Graduate certificate in Transportation.		■	■	■ 3	■
Civic Leadership	■				
Communication	■	■ 4	■	■	
Community Development	■		■		
Community Health	■				
Computer Applications	■				
Computer Engineering			■	7	7
Computer Science	■	■ 4	■	■	■

	Minor	Certificate	Bachelor's	Master's	Doctorate
Conflict Resolution				■	
Contemporary Turkish Studies	■			■	
Criminology and Criminal Justice	■	■	■	■	5
Dance	■				
Earth, Environment, & Society					■
Earth Science			■		
Economics	■	■ 4	■	■	1,3,5
Education Graduate options: Elementary Education, Secondary Education, Special Education, ESL/Bilingual Education, Library/Media, Counseling, Educational Leadership and Policy, and Post-Secondary Education.	■	■ 4		■	■
Electrical Engineering	■		■	7	7
Electrical and Computer Engineering		■ 4		■	■
Engineering & Technology Management				■	■ 1,8
English: Writing	■		■	■	
Environmental Engineering	■		■	■ 3	■
Environmental Management				■	
Environmental & Resource Economics		■ 4		■	
Environmental Science and Management		■ 4	■	■	■
Environmental Studies	■				
European Studies		■	■		
Film	■		■		
Geography	■		■	■	3,5
Geology: Undergraduate option: Environmental Geology minor. Graduate option: Geohydrology	■	■ 4	■	■	3
Gerontology		■ 4			
Global Supply Chain Management				■	
Health Care Management		■		■	
Health Studies: Undergraduate options: Aging Services; Community Health Education; Health Sciences; Physical Activity/Exercise; School Health; M.P.H. option: Health Promotion.	■		■	■	
History	■		■	■	
Indigenous Nations Studies	■				
Infant and Toddler Mental Health	■	■ 4	■	■	
Interdisciplinary Film Studies	■				
Interdisciplinary Studies				■	
International Business Studies		■			
International Development Studies		■	■		
International Economics	■				

	Minor	Certificate	Bachelor's	Master's	Doctorate
International Management				■	
International Studies: African Studies; Canadian Studies; East Asian Studies; European Studies; International Development Studies; Latin American Studies; Middle East Studies.	■		■		
Judaic Studies	■				
Latin American Studies		■			
Law and Legal Studies	■				
Liberal Studies			■		
Management of New Product Development		■ 4			
Manufacturing Engineering				■	
Mathematics	■	■ 4	■	■	■
Mathematics Education					■
Mechanical Engineering: Materials Science and Engineering			■	■	■
Medieval Studies	■				
Middle East Studies		■			
Music: Jazz minor; Graduate options: Conducting, Jazz, Performance	■		■	■	
Nonprofit and Public Management		■ 4		■	
Philosophy	■		■		
Physics	■		■	■	■ 3
Political Science	■		■	■	5
Psychology	■	■	■	■	■
Public Administration: M.P.A. option: Health Administration; M.P.H. option: Health Administration and Policy				■	■ 5
Public Affairs and Policy					■
Real Estate Development	■	■ 4		■	
Science: Options: Biology; Chemistry; Environmental; General; Geology		■	■	■	
Service Learning		■ 4			
Social Science			■	■	
Social Work			■	■	■
Sociology	■		■	■	■ 1,5
Software Engineering		■ 4		■	
Speech and Hearing Sciences			■	■	
Statistics				■	
Strategic Management of Technology		■ 4			
Sustainability		■ 4			

	Minor	Certificate	Bachelor's	Master's	Doctorate
Sustainable Urban Development	■				
Systems Engineering		■ 4		■	
Systems Science: Options for Ph.D.: Anthropology; Business Administration; Civil Engineering; Economics; Engineering Management; General; Mathematics; Mechanical Engineering; Psychology; Sociology.		■ 4		■	■
Technological Entrepreneurship		■ 4			
Technology Management		■ 4			
Theater Arts	■		■	■	
Transportation		■ 4			
Urban Design		■ 4			
Urban Studies and Planning: Graduate option: Urban and Regional Planning; Regional Science	■	■ 4		■	■ 5
Women's Studies: Options for minor: Sexuality, Gender & Queer Studies; Women's Studies	■	■	■		
World Languages: Undergraduate options: Arabic, Chinese, French, German, Japanese, Russian, Spanish, combination of two or more of these languages; Certificates: Teaching Japanese as a Foreign Language; Advanced Proficiency in Russian; Graduate options: French, German, Spanish.	■	■	■	■	
World Languages and Literatures				■	
Writing: Options: Book Publishing, Creative Writing, Technical Writing				■	
<p>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.</p> <p>1 Departments participating in multidisciplinary doctoral program of systems science.</p> <p>2 Offered by Department of Applied Linguistics as Teaching English to Speakers of Other Languages (TESOL).</p> <p>3 Departments participating in multidisciplinary doctoral program of environmental sciences and resources.</p> <p>4 Graduate certificate.</p> <p>5 Departments participating in multidisciplinary doctoral programs of urban studies and public affairs and policy.</p> <p>6 M.A./M.S. offered by Graduate School of Education. M.A.T./M.S.T. offered by cooperation with appropriate department.</p> <p>7 M.S., M.Eng., and Ph.D. in Electrical and Computer Engineering.</p> <p>8 M.S., M.Eng., and Ph.D. in Engineering and Technology Management.</p>					

University graduate admission requirements

University requirements for admission to graduate certificates or degrees. 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, having achieved a minimal accepted GPA, and recommendation from the appropriate department. 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 institution in Australia, English-speaking Canada, Ireland, New Zealand, or the United Kingdom must pass the Test of English as a Foreign Language (TOEFL); the International English Language Testing System exam (IELTS) or the Pearson Test of English-Academic may be substituted for the TOEFL.

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.

Three-Year Bridge Program. This program is an alternate method of meeting graduate admission requirements. It is designed for international students coming from non-Bologna-compliant three-year baccalaureate degree programs recognized by the Ministries of Education in their home countries. This program comprises approximately one year of academic study intended to bridge the differences between the applicant's degree and a four-year U.S. baccalaureate degree. Students are invited to participate in this program only if they have been recommended for admission by their departments.

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 can only be obtained directly from the specific department. Admission is selective, and meeting minimum requirements does not guarantee admission. The number of students admitted to a particular program is limited to the resources available.

Admission Statuses

All admitted graduate certificate and degree stu-

dents will be assigned one of the following admission statuses:

Regular status. Students who meet the University requirements and are recommended for admission by their departments are given Regular status. To be considered for admission with Regular status, the applicant must have a cumulative undergraduate GPA of 2.75 or higher. Applicants who have already earned 9 or more letter-graded graduate credits must have a cumulative graduate GPA of 3.00 or higher; this GPA supersedes the undergraduate GPA. A student who has Regular status is eligible to be a graduate assistant.

University Conditional status. Students who do not meet GPA requirements for Regular status are given University Conditional status if they are recommended for admission by their departments and have a cumulative undergraduate GPA between 2.50 and 2.74. After completing 9 letter-graded graduate credits with a GPA of 3.00 or higher, students with University Conditional status will automatically be given Regular status. Students admitted on University Conditional status who do not achieve a GPA of 3.00 or higher after completing 9 letter-graded graduate credits will have their admission canceled. A student who has University Conditional status is not eligible to be a graduate assistant.

Department Conditional status. Department Conditional status may be imposed on a student who has a deficiency in departmental requirements. These conditions may include GPA requirements or additional coursework and may be more rigorous than University Conditional status or other University standards. Department Conditional status can only be removed by the department with a request to the Office of Graduate Studies. Students who do not fulfill the requirements of their Department Conditional status can have their admission canceled by the department. A student who has Departmental Conditional status is eligible to be a graduate assistant.

Both University Conditional and Department Conditional status. Students who have both University Conditional status and Department Conditional status are subject to all of the policies stated above. University Conditional status and Department Conditional status are converted to Regular status independent of each other, and usually not at the same time. A student who has both University Conditional status and Department Conditional status is not eligible to be a graduate assistant.

Other Admission Categories

Certificate. All students working in a planned program leading only to a postbaccalaureate (not graduate) certificate are given certificate admis-

sion. Certificate students may be admitted to other categories of graduate study and concurrently pursue a postbaccalaureate certificate.

Postbaccalaureate. Students not currently working toward a degree but who wish to register for more than 8 graduate credits may be admitted to postbaccalaureate status. A postbaccalaureate student may find departmental enrollment limitations on many courses.

A postbaccalaureate student wishing to be admitted to a graduate certificate or degree program must apply in the same way as any other applicant, meet the general University requirements, and be recommended for admission by the department. 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. (See section on pre-admission and transfer credit, page 61.)

Departmental Request for Special Admission. In cases when a student does not meet minimum University admission requirements, departments may choose to submit a Graduate Admission – Special Approval Request (GO-20 form). This process may only be initiated by a department (not a student).

Summary of procedures for master's degrees

The following outline summarizes the Portland State University procedural requirements for master's degrees. Additional information can be found in the Office of Graduate Studies (OGS) section of the *Bulletin*, on the OGS website, and on the applicable forms; additional requirements may be imposed by specific programs.

1. Prior to first term of registration, meet with faculty adviser assigned by program director and plan a preliminary program of study, as well as become familiar with general regulation and procedures for the master's degree as described in the *Bulletin*.

2. If graduate courses taken while an undergraduate at PSU and not used in the bachelor's degree are to be considered for use in the graduate program, the department must submit a request to OGS to apply the courses to the program of study. This request should be made soon after admission to the graduate program. (Applicable only for courses completed at PSU, limited to 12 credits maximum.) Reserved credits are also subject to all pre-admission limits and requirements.

3. If pre-admission credits taken at PSU are to be included in the program of study, the department must submit a request to OGS to apply the courses to the program of study. This request should be made soon after admission to the graduate program. If transfer courses (courses taken at any time from another regionally accredited institution) are to be included in the program of study, the Proposed Transfer Credit form (GO-21M) must be filed in OGS for approval. It is strongly suggested that this form be submitted early in the student's program.

4. If admitted with University Conditional and/or Department Conditional status, meet all conditions. Departments must submit a request to OGS to remove Department Conditions status. University Conditional status will automatically be removed after completion of the first 9 letter-graded graduate credits after admission with a 3.00 GPA or higher. University and Departmental Conditional status are converted to Regular status independent of each other, and usually not at the same time. Students must be in Regular status in order to graduate.

5. For an MA or MAT degree, meet the second language requirement. This requirement must be met before any final exam is taken or before the Final Oral Examination Committee form (GO-16M) or any final graduation paperwork can be approved. (For detailed information about "Options for Meeting the Graduate Second Language Requirement for MA and MAT students," see page 65.)

6. Submit the Application for Awarding of Master's or Doctoral Degree form in OGS no later than the first week of the term of graduation.

Deadlines are available on the OGS website.

7. After submitting the Application for Awarding of Master's or Doctoral Degree, consult with adviser and/or department about DARS report and plans for completing final degree requirements

8. The University requires that graduate students who are involved in activities requiring faculty time or the use of University facilities register for a minimum of one graduate credit every term, including those working on any aspects of research or project.

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 finalization through acceptance by OGS.

9. If thesis is to be submitted:

a. Adviser submits the Appointment of Final Oral Examination Committee form (GO-16M) approximately two weeks before the end of the term preceding the term of the defense; see the OGS website for specific dates. The chair of the thesis committee must be regular, full-time PSU instructional faculty, tenured or tenure-track, assistant professor or higher in rank; the other committee members may include adjunct and fixed-term faculty. Two of the committee members (the chair and one other member) must be from the student's department; the third member may be from the student's department or may be PSU faculty from another department or OHSU 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 with the GO-16M form; 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 OGS.

b. The thesis defense must take place at least five weeks prior to the end of the term of anticipated graduation and all members 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.

c. Student must check with the faculty adviser and thesis committee chair to assure completion of requirements prior to final defense.

d. The final thesis must be submitted to OGS no later than three weeks prior to the close of the term of application for graduation. For

details about thesis formatting, submission, and specific deadlines, see the OGS website. Required formatting revisions must be made before graduation.

10. In the case of a non-thesis final oral examinations, including final project presentations, the committee shall consist of at least two members of the student's department, including the student'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 MAT and MST students, one member of the committee is required to be added from the Graduate School of Education or a faculty member with pedagogical expertise in the student's discipline. The oral examination must be scheduled no less than two weeks before the end of the term.

11. Schedule and pass final master's examinations, if required, at least two weeks before date of graduation.

12. An Incomplete or In-Progress grade in any course applied toward degree requirements, excluding thesis (see #14 below), must be removed before graduation.

13. All M (Missing) grades in PSU graduate courses that could potentially be letter graded must be removed before graduation. c.

14. All coursework applied to a master's degree must be completed within seven years prior to the awarding of the degree (e.g., a course taken in fall term 2006 will be beyond the seven-year limitation at the close of fall 2013).

15. Adviser is responsible for the completion of the Recommendation for the Degree form (GO-17M), which is due in OGS after end-of-term grades are posted. IP (In-Progress) grades for required thesis credits are changed on the GO-17M form, eliminating the need for Supplemental Grade Reports for these courses. Outstanding grades for all other required courses must be submitted by the instructor directly to the Office of Admissions, Registration, and Records.

16. The Dean of Graduate Studies certifies that all requirements for the degree have been met and recommends the awarding of the degree.

17. The degree is awarded in the Student Information System, which causes a diploma to be produced. Diplomas are available in the Office of Degree Requirements (104 Neuberger Hall) approximately one full term after the degree is awarded. (Please note that commencement is not the same as graduation.)

Summary of procedures for doctoral degrees

The following outline summarizes the Portland State University procedural requirements for doctoral degrees. Additional information is in the Office of Graduate Studies (OGS) section of the *Bulletin*, on the OGS website, 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. In some programs the student may be required to pass preliminary examinations.
3. If transfer courses (courses taken at any time from another regionally accredited institution) are to be included on the program of study, the Proposed Transfer Credit form (GO-21D) must be filed in OGS for approval. It is strongly suggested that this form be submitted early in the student's program.
4. 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.
5. Second language examinations, if required, must be passed before the comprehensive examination is taken. Notice of passing of the examination is sent to OGS.
6. For the residency requirement, each doctoral student must register for and successfully complete three consecutive terms of 9 or more graduate credits applicable to the degree after admission to the doctoral program at PSU. Summer term may be included (i.e., spring 2013, summer, fall 2013) or excluded (i.e., spring 2013, fall 2013, winter 2014) in calculating consecutive terms.
7. 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 OGS. All coursework on the program of study, with the possible exception of seminar and internships, must be completed before a student can be advanced to candidacy. For students entering a doctoral program with a master's degree, a maximum of five years will be allowed from admission to completion of all required comprehensive examinations. For students entering with a bachelor's degree, a maximum of two additional years will be added to this limit, for a maximum of seven years from admission to completion of all comprehensive examinations.
8. The comprehensive examinations are scheduled and administered in accordance with established rules of the program. The results of the examina-

tion are sent to OGS. Students have a maximum of three years from the completion of comprehensive examinations to advancement to candidacy.

9. After passing the comprehensive examination and identifying a dissertation topic, a dissertation committee is appointed and the student must pass a proposal defense. The dissertation committee must be approved by OGS using the Appointment of Doctoral Dissertation Committee form (GO-16D). The dissertation committee must consist of four to six PSU faculty members: the dissertation adviser, a minimum of two and a maximum of four regular members, and the Graduate Office Representative. The chair of the dissertation committee and the Graduate Office Representative must be regular, full-time PSU instructional faculty, tenured or tenure-track, assistant professor or higher in rank; the other two to four committee members may include adjunct or fixed-term faculty and/or one member of the OHSU faculty. If it is necessary to go off-campus for one committee member with specific expertise not available among PSU faculty, a curriculum vitae (CV) for that proposed member must be presented with the GO-16D form. This off-campus member may substitute for one of the two to four regular committee members. All committee members must have doctoral degrees. No proposal defense shall be valid without a dissertation committee approved by OGS.
10. The proposal meeting must take place in a formal meeting of the entire approved dissertation committee; the student will make an oral presentation of the written proposal. The doctoral program recommends the student for advancement to candidacy once the dissertation proposal has been approved. If the student has not satisfied the residency requirement, a plan for doctoral residency compliance must also accompany the request for candidacy.
11. After proposal approval, the student submits a Human Subjects Research Review Committee (HSRRC) application to the Office of Research and Strategic Partnerships if human subjects are involved in the research in any way. A student cannot be advanced to candidacy until HSRRC approval is granted.
11. 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.

CANDIDACY FOR THE DEGREE

1. Ph.D. students must register for a minimum of 27 hours of dissertation (603) credits before gradu-

ation; 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. 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 Awarding of the Master's or Doctoral Degree form with the Office of Graduate Studies no later than the first week of the anticipated term of graduation. Deadlines are available on the OGS website.
4. After preparation of the written dissertation, the candidate's dissertation committee will conduct a dissertation defense. A dissertation defense may be scheduled only during the regular academic terms, at least five weeks prior to the end of the term of anticipated graduation. For summer term graduation, deadlines apply to the regular eight-week Summer Session dates. The student must deliver a final draft of the dissertation to all members of the approved committee no fewer than two weeks before the dissertation defense. All committee members or alternates approved in advance by OGS must be present for the dissertation defense.
5. The final dissertation must be submitted to the Office of Graduate Studies not later than three weeks prior to the close of the term of application for graduation. For details about formatting, submission, and specific deadlines, see the OGS website.
6. All M (Missing) grades in PSU graduate courses that could potentially be letter graded must be removed graduation.
7. The doctoral program completes the Recommendation for the Degree form (GO-17D) which is forwarded to OGS. IP (In-Progress) grades for 603 dissertation credits are changed on this form, eliminating the need for Supplemental Grade Reports for these courses.
8. The Dean of Graduate Studies certifies that all requirements for the degree have been met and recommends the awarding of the degree.
9. The degree is awarded in the Student Information System, which causes a diploma to be produced. Diplomas are available in the Office of Degree Requirements (104 Neuberger Hall) approximately one full term after the degree is awarded. (Please note that commencement is not the same as graduation. Doctoral students must be certified by OGS in order to participate in the PSU Spring Commencement ceremony.)

Key to course descriptions

1 2 3 4

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.

5

6

- 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.

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.

- 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. **Expected preparation** identifies minimal knowledge and/or capabilities (competencies) expected of students prior to entering a specific course and are recommendations only.

University Housing and Residence Life

Location The Broadway Building, Suite 210
625 SW Jackson Street
Call 503-725-4375
Email housing@pdx.edu
Web www.pdx.edu/housing
Hours 9:00 am – 5:00 pm, Monday – Friday
Tours 1:30 pm Monday – Friday, Broadway Suite 210

WHAT WE DO

We provide housing options for students attending Portland State and neighboring institutions, while providing a unique living experience in Portland's urban environment through actively engaged residential communities that promote student success.

HOUSING OPTIONS

Housing offers ten buildings, both modern and historic, with many different types of rooms including sleepers, studios, and 1 and 2 bedroom apartments. Residents have the option of choosing to live in a single room, or a double with a roommate, as well as in a furnished or unfurnished unit. Incoming freshman (aged 19 years or younger and who have not yet completed one full year of college) will live in one of the First Year Experience (FYE) buildings, Broadway or Ondine, in a Living Learning Community (LLC). Most LLC accommodations are furnished double rooms, with a limited number of single accommodations available.

FYE: double or single occupancy, furnished studios located in Broadway and Ondine for First Year Experience residents only

NON-FYE OPTIONS:

Sleeper: a small single room with a community bath and community kitchen, furnished and unfurnished options.

Studio Suites: double or single occupancy, furnished rooms that share a kitchen and bath space with adjacency unit.

Studio: an efficiency apartment, historic and modern options, with its own kitchen and bath; available furnished or unfurnished.

One Bedroom: one bedroom apartment with double or single occupancy, historic and modern options, with its own kitchen and bath; available furnished or unfurnished.

Two Bedroom: limited and only available for residents with children, unfurnished.

RATES

The cost of University Housing can vary depending on the type of room choose to live in. Housing charges include the cost of the student's unit as well as all utilities, local phone service, high speed internet and in some cases, cable TV. Housing costs are charged per term, and are billed to the student's account at the beginning of the academic quarter.

FINE PRINT

All residents (except for non-student spouses, domestic partners, or dependents) must be registered for a minimum number of credit hours to be eligible for Housing (8 for undergraduate, 4 for graduate).

The University Housing Contract is a legally binding agreement; please read the Contract Terms and Conditions before submitting your contract. You can find the contract, as well as the Terms and Conditions on the University Housing website. Once you've determined that University Housing is the right fit for you, submit your contract as quickly as possible. Assignment priority is based on date of contract receipt.

University Housing and Residence Life

2013-2014 PROPOSED RATES

FYE		
Broadway	Ondine	Meal Plans
Double- \$2080	Double- \$1615	All-Access- \$1213
Single- \$3145	Single- \$2480	The 15- \$1211
		The 10- \$1156
		Economy- \$899

NON-FYE		
Sleepers		
Furnished- \$1440-\$1680		
Unfurnished- \$1420-\$2010		

Studios		Studio Suites
<i>Modern</i>		Double- \$1340
Double- Furnished- \$1780, Unfurnished- \$1680		Single- \$2070
Single- Furnished- \$2700, Unfurnished- \$2600		
<i>Historic</i>		
Single- \$1955-\$2410		

One Bedrooms		Two Bedrooms
<i>Modern</i>		<i>Reserved for residents with children only</i>
Double- Furnished- \$2065, Unfurnished- \$1965		Double- \$2170
Single- Furnished- \$3380, Unfurnished \$3280		Single- \$3995
Blumel Family Rate- \$3580		
<i>Historic</i>		
Double- \$1620-\$1690		
Single- \$2935-\$3075		

Welcome to Portland State University



Vision, Mission, Values and Priorities

Our vision is to be an internationally recognized urban university known for excellence in student learning, innovative research, and community engagement that contributes to the economic vitality, environmental sustainability, and quality of life in the Portland region and beyond.

The mission of Portland State University 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 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.

Portland State values learning and discovery, access to learning, a climate of mutual respect, openness and reflection, and community and civic engagement. Engagement among faculty, students and the community contributes to learning and scholarship that is globally relevant and regionally focused. Sustainability is an important programmatic focus.

The following themes guide our efforts and direct our resources:

- Provide Civic Leadership through Partnerships.
- Improve Student Success.
- Achieve Global Excellence.
- Enhance Educational Opportunity.
- Expand Resources and Improve Effectiveness.

Engaged with the community

Portland State University is a nationally recognized leader in community engagement, combining academic rigor in the classroom with community-based learning. With a student body of 29,000, Portland State is selected by more students than any other Oregon University. The university's urban setting and focus on community partnerships, acts as a "living laboratory" that successfully prepares tomorrow's forward thinking leaders with the experience needed to succeed. Portland State's reputation for innovation prompted U.S. News & World Report to name PSU as a top "up and com-

ing" national university in its Best Colleges 2013 guidebook.

Distinguished programs and faculty

Many of Portland State's disciplinary programs are nationally ranked in the top 20 in the United States, and *U.S. News & World Report* has ranked Portland State's curriculum among the best in the nation for the past 10 years. The innovative University Studies program, a four-year general education program which promotes community-based learning, interdisciplinary teaching and learning and engagement in real world problems, has established

Portland State as a national model for other colleges and universities, seeking to adapt their curriculum to better engage with their own communities.

Portland State professors are prized for their knowledge, research, achievements, and, ability to engage students. Faculty come to Portland State from colleges and universities around the world. Though diverse in culture, background, language, and ethnicity, they come to Portland unified in their commitment to be part of the University's exceptional approach to learning, engagement, and research.

PSU's motto, "Let knowledge serve the city," inspires faculty research locally and around the world. Many professors conduct research that addresses some of society's most perplexing challenges—providing students with firsthand knowledge and opportunities for involvement and collaboration in their communities. Faculty use their expertise to serve the region through their work with businesses, not-for-profits, and governmental agencies and by holding key posts in professional, cultural, and civic groups.

Research and Strategic Partnerships

Research at Portland State University is growing. Externally funded research surpassed \$64 million in 2011, more than double the activity from eight years ago. PSU has made significant contributions in research areas ranging from signal processing in biomedical applications to life in extreme environments. Among our faculty are internationally recognized researchers in engineering and physical, social, and natural sciences.

PSU partners with our sister institutions in Oregon through Signature Research Centers in nanotechnology, drug discovery, and sustainability in the built environment. We collaborate with Oregon Health and Science University through interdisciplinary research where our expertise in social science, biology, and chemistry add value to their clinical know-how. Our research strengths in specialized fields such as invasive species and ecosystem services bring world-class partners like the Smithsonian Institution. And our strong relationships with companies like Intel and PGE provide partnerships in cutting edge research as well as training opportunities for students and employees.

Green: It's more than our school color

At Portland State University, students have the opportunity to do more than study sustainability, they engage directly with the community to make sustainability real. Portland State strives to harness the

strengths of the university—with new ideas, innovative partnerships, and academic rigor—moving closer toward solving the environmental, social, and economic problems of our time.

Green school spirit can also be seen on the campus itself. Each new building or major renovation on campus over the past eight years, has received at least a Leadership in Energy and Environmental Design (LEED) Silver certification. The new buildings include such sustainable design features as ecoroofs, rainwater harvesting, and geothermal heating and cooling systems.

Working with like-minded sustainable businesses, individuals, and organizations, faculty and students are performing valuable research on alternative energy sources such as solar panels; aggressive waste reduction and recycling programs; sustainable building practices; and much more. Many of the University's 213 bachelor's, master's, and doctoral degrees encourage students to consider issues that integrate economic, social, and environmental viewpoints. Armed with this knowledge and experience, they will join a generation of leaders building a more sustainable world, one idea at a time.

Portland: The community is our campus

Portland State University's prized location in the middle of a major city guarantees students are always within easy reach of something exciting. Parks, museums, cafes, theaters, shopping, acclaimed restaurants, and professional sports are all close by.

Since its establishment in 1946 to meet the educational needs of GI's home from World War II battlefields, Portland State found its first home in Vanport, a former federal housing project along the Columbia River. The campus moved to Lincoln Hall in Portland's South Park Blocks in 1952 and now encompasses 50 city blocks, yet still retains a park-like beauty within its urban setting.

The Park Blocks, a natural gathering area for students and faculty, provide a place to talk or study. West of the Park Blocks, PSU's Urban Center stands at the busiest public transportation hub in the city. It's the only location in the city where TriMet's bus system, Portland Streetcar, and, in 2009, its MAX light rail line come together. Bicycling to campus is not considered an alternative transportation method, but a main way students get to campus. With Portland State's new Initiative for Bicycle and Pedestrian Innovation, along with research and design integrating safer bike paths in urban cities, Portland State continues to meet the educational and sustainable needs of the Portland metropolitan region.

With urban sophistication, small town accessibility, and the many outdoor activi-

ties, Portland and Portland State offer a great living and learning experience.

The Founding of Portland State University

Portland State University's roots trace back to the summer of 1946 when the Oregon State Board of Higher Education approved the opening of a temporary school in North Portland to offer lower-division coursework. Vanport Extension Center (VEC), named for its location between Portland and Vancouver, was situated in Vanport City, a wartime housing project that promised resident and classroom space for the students attending VEC. Spearheaded by founder and director, Stephen Epler, VEC soon became known as "Vanport College" and was immediately successful in meeting local demands for higher education by returning World War II servicemen and women. When fall term registration closed at VEC, more than 1,400 students enrolled, eclipsing the projection of 500 and signaling future success for the center.

Seemingly ending VEC's future, the 1948 Memorial Day flood of the Columbia River destroyed Vanport City, including the center. Epler and his colleagues kept the school alive, using federal funds to reinstate the campus at "Oregon Ship," a former Oregon Shipbuilding Corporation site. The school's commitment and fighting spirit earned it the national reputation as "the college that would not die." Students, faculty, community groups, and legislators were strong advocates for the school, spurring its permanence and move in 1952 to its present location in Portland's South Park Blocks, where it became the Portland State Extension Center in the former Lincoln High School (now Lincoln Hall).

In 1955, the legislature created Portland State College as a four-year degree-granting institution. Graduate work was added in 1961; doctoral programs began in 1968, and the institution became Portland State University in 1969. The University has grown from an initial enrollment of 1,410 students in 1946 to become Oregon's largest university.

"Portland State formed a legacy of courage, leadership, dedication, and collaboration during its founding years, 1946-1955. These qualities enabled a small extension center to become a four-year, degree-granting college. Today this legacy inspires Portland State University to enhance the intellectual, social, cultural, and economic vitality of Portland, the Pacific Northwest, and beyond."¹

The Founder and presidents who have served the University are Stephen E. Epler (Vanport Extension Center), 1946 to 1952; 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; Judith A. Ramaley, 1990 to 1997; Daniel O. Bernstine, 1997 to 2007; Michael F. Reardon (interim president), 2007 to 2008; and Wim Wiewel, 2008 to present.

¹From *Creating Portland State: 1946-1955*.

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 special 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 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 of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 - telephone: (410) 347-7700. The computer science program is accredited by the Computing Accreditation Commission of ABET.

In the College of Liberal Arts and Sciences, the Department of Speech and Hearing Sciences is accredited by the Council on Academic Accreditation (CAA) of the American Speech-Language Hearing Association (ASHA). 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.

The Master of Public Administration – Health Administration and the Master of Public Health – Health Management & Policy are accredited by the Commission on Accreditation of Healthcare Management Education (CAHME).

In the College of the Arts the School of Music is accredited by the National Association of Schools of Music. Theater programs in the School of Theatre & Film are accredited by the National Association of Schools of Theater. The Master of Architecture degree in the School of Architecture is a National Architectural Accrediting Board candidate program.

Tuition and fees

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 on the web at www.pdx.edu.

A **regular student** is defined as a resident or nonresident undergraduate, postbaccalaureate, 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 student recreation 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 and will be assessed tuition and fees based on student level.

All non-admitted part-time students, 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 enrolled in 4 or less hours are not entitled to health services or insurance; however, students taking 5-8 hours will be billed health services as part of their tuition and fees. 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. Specific deadlines are available at www.pdx.edu. 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. First-time participants must sign an agreement which is available on the Web at www.pdx.edu/bao/forms/policies.

Tuition and fee schedules/Regular tuition schedule. Note: The 2013-2014 tuition and fee schedules have not been set by the Oregon State Board of Higher Education. Students should consult the tuition and fee listing at www.pdx.edu 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 (Non-admitted)—8 credits or fewer. Non-admitted 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 (Admitted) – One credit or more. Admitted students taking one credit 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, 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.

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 Student Accounts Department, 179 Neuberger Hall, 503-725-3440.

Terms and Conditions (formerly 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. All students must accept the Terms and Conditions upon creating an OAM account or resetting their OAM password. First-time participants must sign an agreement which is available at the Student Accounts Window, Neuberger Hall lobby or on the Web at www.pdx.edu/bao/forms/policies.

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.

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

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 the normal rate and must be approved by the department head and dean of Graduate Studies. GAs are responsible for paying the Building, Health, Incidental, and Technology fees.

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.

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 account, 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 Student Accounts Department.

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.

Campus services

Alumni Association

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

The Office of Alumni Relations, a division of University Advancement, strives to maintain a strong and continuing relationship with Portland State's 165,000 alumni throughout the world. Activities, events and communications are designed to help graduates stay connected to each other and to the University. For example, *Portland State Magazine* highlights alumni achievement and success through profiles and alum notes as well as upcoming events and campus news. We also connect and inform alumni through social media and a monthly electronic e-newsletter. The Alumni staff collaborates with an all-volunteer Alumni Board of Directors to operate the PSU Alumni Association, a 501c3 not-for profit organization to benefit alumni and support University priorities. The Alumni Association programming includes: PSU Advocates, volunteers who represent PSU in the legislative process; PSU Weekend, an educational outreach program; educational travel; affinity insurance programs, local, regional, national and international events and activities and gatherings. Alumni Relations proudly resides in the historical Simon Benson House, which serves as an alumni and visitor's center and is available to rent for events.

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. The PSU box office has a new on line ticket website. It is a quick, simple way for our community to select and print at home tickets for PSU events. Please go to www.pdx.edu/boxoffice/tickets.

The Box office website is also an excellent source for information on events that are free for PSU Students. For information on how to access the Box Office to sell tickets to your events, check our website at www.boxoffice.pdx.edu or call 503-725-3307.

Campus Public Safety Office

503-725-4407 (business)
503-725-4404 (emergency)
148 Shattuck Hall
www.pdx.edu/cpso

The Campus Public Safety Office consists of five components: Public Safety, Dispatch, Emergency Management, Clery, and Lenel & Access, who are responsible for providing physical security services to Portland State University and to work closely with the local, state, and federal police agencies to provide a safe and healthy community for learning.

Campus Public Safety Officers provide a continuous presence on campus and have Law Enforcement authority to arrest individuals involved in illegal acts on-campus. Campus Public Safety Officers patrol by vehicle, bicycle and on foot to provide assistance to those in need. If minor offenses involving University rules and regulations are committed by a University student, the Campus Public Safety Office may also refer the individual to the disciplinary division of Student Affairs. A trained and experienced Campus Public Safety Detective is available to assist in complex investigations including sexual assault investigations.

Campus Dispatchers provide 24/7 access for persons needing emergency and after-hours assistance including escort requests, suspicious activity, emergency medical, or crime reporting. The Campus Public Safety Dispatch center provides the university with a central communications hub to access a myriad of resources both internally and externally including being the after-hours contact point for the CARE Team.

The Emergency Management's mission is to safeguard the education environment of Portland State University through the application of a comprehensive emergency management program of mitigation and prevention, preparedness, response, and recovery.

The intent of the Clery report is to inform the community of the extent of reported crimes occurring in the previous calendar year. Data is collected from a variety of sources, including Portland Police Bureau and various University departments such as the Campus Public Safety Office, Dean of Students Life, Office of Residence Life, Athletics Department, Human Resources Center, Student Activities Leadership Program, Global Diversity and Inclusion, and the Women's Resource Center.

Public Safety's Lenel & Access unit is

responsible for providing building access and codes.

Office of Global Diversity & Inclusion

503-725-5919
www.pdx.edu/diversity
diversity@pdx.edu

The Office of Global Diversity & Inclusion includes the Office of Equity & Compliance and the Diversity Advocacy Office.

The Office of Global Diversity & Inclusion's mission is to create a positive campus climate that celebrates diversity, builds partnerships, promotes equity, and supports the entire campus community.

The Office of Global Diversity & Inclusion's vision is to promote the value diversity brings to the campus by helping to create an inclusive and culturally respectful university environment.

Diversity Objectives include:

1. Assess and enhance the university climate to support and advance diversity and inclusion.
2. Increase recruitment and representation of diverse students, faculty and staff throughout the university.
3. Implement a comprehensive program to enhance retention, advancement and engagement of diverse communities at PSU.
4. Develop and implement standards to ensure responsibility and accountability for achieving PSU's diversity, multiculturalism, cultural competency and affirmative action related goals and objectives.

5. Enhance community collaborations and business partnerships designed to engage diverse communities in teaching, research and community outreach. For more detailed information about our functions, anti-discrimination policies, sexual harassment policy and complaint procedures, contact our office by phone at 503-725-5919, TTY 503-725-6503. The Office of Global Diversity & Inclusion is located in the Market Center Building, Suite 830. We are open Monday through Friday from 8:00 am to 5:00 pm.

Information Center/Hub

1825 SW Broadway
503-725-4402

Located in the lobby of the Smith Memorial Student Union, the Information Desk provides both visitors and the campus community with answers to all kinds of questions. The "Info Hub" can provide class, building

and event schedules. They have access to contact information for all campus buildings, programs and professors, as well as campus maps. The Hub is your one-stop specialty center on virtually all phases of community life at Portland State University. The operating hours are Monday–Friday, 8 a.m. to 5 p.m. during class sessions.

Information Technologies

503-725-HELP

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

The Office of Information Technologies (OIT) provides support for computing, voice and data communications, multimedia, labs, classrooms, and audiovisual services. All faculty, staff, and students can receive support by calling, sending email, visiting the OIT website, or visiting the Help Desk in room 18 Smith Memorial Student Union.

Smith Memorial Student Union

503-725-2663

www.pdx.edu/conferences

The Smith Memorial Student Union (SMSU), located at 1825 SW Broadway, serves as the living room for the PSU campus. It is a gathering place for students, faculty and staff to meet, attend events, socialize, eat, relax and take advantage of recreational facilities.

The SMSU Ballroom and its other meeting rooms host a variety of activities, including conferences, lectures, meetings, dances and concerts. All campus events (other than credit classes) are scheduled by Conference & Events in room 435 of the SMSU.

The SMSU is home to the Associated Students of PSU as well as many other student groups, student publications and is home to the Multicultural Center, La Casa Latina, the Dean of Student Life, Student Activities and Leadership Programs as well as many other student services and advocacy centers.

The SMSU has amenities as diverse as the student run Littmann and White art galleries, the Viking Bowl and Billiards, the

University Market, which sells sundries and study prep materials. The Spirit Store sells PSU spirit gear and memorabilia. The SMSU food court provides diverse cuisines and dining experiences from Einstein's Bagels, the Stir Crazy Wok and the Grille Works, as well as having a Starbucks coffee as well as the student-run Food for Thought Café.

In addition to these amenities, the SMSU offers dining and lounge spaces, including the newly remodeled 4th Floor Quiet Study Lounge, the Parkway Commons and the second floor Main Lounge, which offers a picturesque view of the Park Blocks.

Transportation and Parking Services

503-725-3442

www.pdx.edu/transportation

Whether you travel by bike, bus, car, train, skateboard or your own two legs, our mission is the same: Get you to where you need to go on campus in the most efficient, affordable, and sustainable manner possible.

PSU has almost 20 bus, light-rail train and streetcar stops on campus, so it should come as no surprise that public transit is the most popular and convenient option for getting to campus. Discounted transit passes, called FlexPasses, are available to current students at approximately 30% less than the standard TriMet rate. These passes can be purchased in person at the Transportation office with a valid PSU photo ID card.

PSU is also an award-winning bicycle friendly campus. Bicycle parking racks are available outside all buildings on campus as a convenient, short-term parking option for riders. PSU Transportation also manages a growing number of long-term secure bike parking facilities which allow you to park your bike in a space that's safe and dry. You can also keep your bike running smoothly at the PSU Bike Hub, an on-campus bike shop at the ASRC, where students and staff can learn to service their bikes, buy accessories and parts, drop off a bike for professional repair service or rent a bike.

Need a car once in a while? Zipcar, Portland's largest carsharing company, has over 25 vehicles available in the university district and PSU students and employees

can join this service at a discount. PSU is also host to carsharing vehicles in the peer-to-peer system called Getaround, and frequently vehicles from Car2Go are also available on campus.

For those who need to drive to campus, a wide variety of parking permits are available by the term and by the academic year. Term parking permits should be purchased in advance, prior to the term start, as they frequently sell out. Permits can be purchased online at my.pdx.edu approximately 4 weeks before the start of the term. Permits purchased online are sent by mail before the term begins. Daily and hourly parking is also available in PSU parking structures, lots and on most streets throughout campus.

If you have any questions regarding your transportation options at PSU, please call the Transportation & Parking Services office at 503-725-3442 or visit pdx.edu/transportation. The Transportation & Parking Services office is located at 1812 SW 6th Ave, in the Academic & Student Recreation Center.

University Place Hotel

1.866.845.4647

www.uplacehotel.com

The University Place Hotel and Conference Center, located at 310 SW Lincoln, provides 8,000 square feet of meeting and banquet space including 10 meeting rooms and a recently renovated 3,800 square-foot ballroom. Hotel lodging amenities include:

- Seasonal outdoor heated pool
- Hot breakfast with eggs, bacon, pastries, and more
- On-site restaurant, Lincoln Station Grill
- A 24-hour fitness center, with all new equipment
- High-speed internet in all guest rooms & common areas
- On-site parking (just \$12/night—the best rate in downtown Portland)
- Avis/Budget rental car service

Please call 1.866.845.4647 for more information or visit www.uplacehotel.com.

Office of International Affairs

Ron L. Witczak, Executive Director
101 East Hall
503-725-4094
www.pdx.edu/international-affairs

The Office of International Affairs (OIA) provides support for international students, scholars and faculty, as well as PSU students and faculty who are planning to study, intern and teach abroad. OIA also houses Centers and Institutes, promoting cultural understanding and engagement focusing on specific geographic regions. In addition OIA hosts Special Programs for foreign students visiting the US.

Confucius Institute at PSU

Director: Meiru Liu
306 East Hall, 503-725-2285/9810
www.pdx.edu/confucius-institute

The Confucius Institute at PSU (CIPSU) is a joint educational project of Portland State University and the Office of Chinese Language Council International (Hanban) of the People's Republic of China (PRC). CIPSU seeks to promote deeper understanding of Chinese language and culture in the greater Portland area and fosters mutually beneficial educational exchanges between the United States and China. CIPSU's offerings include non-degree courses in elementary schools and institutions of higher education, teacher trainings and testing for Chinese language, academic programs related to Chinese culture and contemporary China and scholarships to Chinese and Oregon students.

CIPSU hosts visiting faculty from the PRC and has a board of directors drawn from the greater Portland area. The board consists of professors from Portland State University and other educational institutions, as well as Portland-area businesses and individuals with a strong interest in China. CIPSU is an independently funded entity that reports to PSU's Office of International Affairs.

Institute for Asian Studies

Director: Sharon Carstens
307 East Hall, 503-725-8576
www.pdx.edu/institute-for-asian-studies

The mission of the Institute is to contribute to the internationalization objectives of PSU by: promoting research, training, teaching, curricular development, and public awareness on all parts of Asia; collaborating with

other units of the University, and with other educational organizations in Oregon, to promote better understanding of Asia, past and present; sponsoring conferences, speakers training programs, and other Asia-focused activities; and working with PSU administration and faculty to develop strategies for increasing the coherence and effectiveness of the University's Asia programs and its profile in Asia.

Middle East Studies Center

Director: James Grehan
318 East Hall, 503-725-4074
www.pdx.edu/middle-east-studies

The Middle East Studies Center at Portland State University promotes understanding of the people, cultures, languages and religions of the Middle East. As a National Resource Center for Middle East Studies under the U.S. Department of Education's Title VI program, the Center serves as a resource on issues pertaining to the Middle East through activities that reach students and scholars, as well as businesses, educators, and the media. The Middle East Studies Center supports academic conferences, workshops, cultural events, lectures, and a resource library.

The Middle East Studies Center started in 1959 as the first federally supported undergraduate program for Arabic language and Middle East area studies in the nation. Portland State's Middle East studies curriculum includes foreign language courses in Arabic, Hebrew, Turkish and Persian as well as area studies courses in a number of disciplines. The Middle East studies program boasts a distinguished faculty and vast library resources.

MESC works with 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.

Academic options in Middle East Studies:

- Bachelor of Arts degree in international studies with a concentration in the Middle East.
- Bachelor of Arts degree in Arabic language & literature.
- Certificates in Middle East Studies and Contemporary Turkish Studies complement a Bachelor of Science or Arts degree in any other PSU degree

program.

- Minors in Arabic language, Persian language, Turkish language and Judaic Studies.
- Study of Arabic, Hebrew, Kurdish, Persian, and Turkish languages.
- Study abroad in Egypt, Israel, Jordan, Morocco, Turkey, and the United Arab Emirates.

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: Foreign Language & Area Studies (FLAS) fellowships, the Aspen Mitzvah Fund Scholarship, the Joseph & Takla Azar Scholarship for Arabic Studies, the Frank & Margaret Bitar Scholarship, the Elizabeth Ducey Scholarship, the Noury & Lamia al-Khaledy Scholarship for Arabic Studies, the Patricia & Gary Leiser Scholarship in Middle East Languages, and the Hanna & Wardah Sbaib Scholarship for Sung Poetry and Folk Songs.

Community outreach

The Middle East Studies Center promotes a critical understanding of the Middle East through engagement with K-12 schools and educators, local and regional community groups, non-governmental organizations, government agencies, media, businesses, and the general public. Drawing on the knowledge, expertise, and experience of the University community, MESC programming reflects the diversity of the region and provides insight into the histories, cultures, languages, religions, politics, and contemporary issues of the Middle East.

IE₃: Global Internships

Advisor: Blythe Knott
210 East Hall, 503-725-4030

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 degree.

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, understanding of a foreign culture, 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.ous.edu>.

International Student and Scholar Services

Director: Judy Van Dyck
Associate Director: Christina Luther
Associate Director: Jill Townley
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, scholars and faculty include:

- An intensive orientation program for all incoming international students and faculty.
- Provision of immigration assistance for students, visiting scholars, exchange students and scholars.
- Three scholarship programs specifically for international students.
- Sponsorship of a wide variety of educational and social events for international students and scholars with University and community groups, including a mentoring program which matches new international students with returning students.
- 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.

- Advising for faculty and staff regarding the invitation and employment of international faculty.
- Preparation of Labor Certification applications on behalf of international faculty.
- Advising of international faculty (and their dependents) on regulations and procedures for maintaining legal status, travel, employment authorization, and other issues.
- Administration of the summer International Visiting Professor (IVP) program.

For more information about staff and services, please visit our websites:

www.pdx.edu/international-students and www.pdx.edu/international-scholars.

For information about international student admissions, contact the Office of Admissions, International Student Admissions, 503-725-3511 or intladm@pdx.edu.

For information about English as a Second Language (ESL), contact the Intensive English Language Program in the Department of Applied Linguistics, University Center Building Suite 400, 503-725-4088 or www.esl@pdx.edu.

International Special Programs

Director: Judy Van Dyck
503-725-4878

Provides training and education programs for professional and student groups, custom-designed for specific international organizations/agencies/institutions, which draw on resources and expertise of PSU faculty and the Portland community to provide specialized instruction.

ISP provides administrative, logistical, and curricular support services to provide for a custom-designed group package experience which includes instruction, extra-/co-curricular activities, transportation, housing and meals. ISP hosts 30-35 groups a year. For more information visit our website at www.isp.pdx.edu.

PSU-Waseda Transnational Programs (WTP)

Director: Sally S. Mudiama
220 East Hall, 503-725-5728
www.pdx.edu/transnational-programs

PSU-WASEDA Transnational Programs (WTP) runs academic bridge programs for international students at PSU. WTP offers tracks in Business Administration, International Studies, and Health & Sustainability. The one-year curriculum allows highly motivated international students with 460-526 TOEFL scores to immediately enroll in regular courses with local students.

Students enrolled in the Waseda Transnational Programs will not be restricted to enroll in regular ESL courses. The program is accelerated and therefore available to motivated and select students who meet certain criteria.

The WTP Office is results-centered for its students' success and provides an extremely high level of support to its students including: 24/7 on-call student services assistant, extracurricular volunteer placements, housing placement, academic advising, TOEFL preparation and cultural/daily living adjustment. The courses are taught by regular PSU faculty and language support specialists to ensure that students are successful and able to participate with native English speakers in the classroom.

Education Abroad

Director: Ron L. Witczak
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) and educational associations such as the Council on International Educational Exchange (CIEE), School for International Training (SIT), and IFSA-Butler.

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.

Advisers in the Office of International Affairs provide guidance and assistance for students who seek to enrich their university education through education abroad. PSU offers over 100 programs in more than 40 countries. 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 ranges 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, Suriname, India, and Costa Rica. 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.oia.pdx.edu/ea, or come to our office in East Hall, room 101.

Fulbright Program

Director: Debra Z. Clemans
101 East Hall
clemansd@pdx.edu

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, alumni, and graduate students for English teaching or 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 September 8, 2013 for the 2014-2015 academic year. The

Fulbright program director disseminates information about grant opportunities and assists in processing grant applications.

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

Opportunities Abroad for Teachers. The Institute for International Education 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 following website: www.fulbrightteacherexchange.org. Interviews for Oregon-area applicants are arranged by the Fulbright director at PSU and are held in early December.

Boren Programs

David L. Boren Scholarships (NSEP)
Director: Debra Clemans
101 East Hall
clemansd@pdx.edu

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 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, 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 early in winter term each year. Interviews are held on the PSU campus prior to Boren deadlines. Those interested should contact the Boren director listed above for more information on requirements and application details.



University Library

Marilyn Moody, Dean
503-725-5874
library.pdx.edu

The University Library provides an extensive array of user-centered information services and resources and delivers a strong instruction program dedicated to improving students' academic success. The electronic collections, available at the Library's Web site, include thousands of academic library resources like full text journal articles, books, and reference databases--all available online anytime and anywhere. A wealth of library resources and services are located at the **Branford Price Millar Library**, located on the west side of the South Park Blocks across from Neuberger Hall. Special Collections and University Archives feature unique materials of regional and scholarly interest. *PDXScholar*, the university's digital repository, houses online PSU theses, dissertations, and faculty scholarly contributions.

Classes and workshops on library information and resources are available for students and faculty. An Instruction Request Form is available online for faculty interested in

librarian instruction services. Librarians are available for students who need assistance with a project, thesis, or dissertation. Find contact information for the subject librarian for your discipline on the Library's Web site.

For reference assistance, visit the Library Research Center on the second floor, use the 24/7 chat service, text 66746 (begin your text with the word PDX), email eref@lists.pdx.edu, or call 503-725-2399. Look for the Ask Us! links on the Library's Web site.

To check out materials, visit the Circulation desk on the first floor. A valid PSU ID or library card is required. More information about borrowing materials, loan periods, fines, and renewals is available online.

Course reserves materials may be checked out at the Circulation desk on the first floor. Electronic course reserves are available via the Library's Web site.

The Library provides collaborative study spaces and technology-enabled environments designed to enhance students' learning experiences. Group study rooms, two practice presentation rooms, a media viewing room,

and a family friendly study room are available. They can be reserved in advance online. Keys may be picked up at the Circulation desk. The Library also provides designated quiet study floors for individual study.

Food and drinks are allowed. Branford's Bean, an onsite coffee cart on the first floor, is open during most Library hours.

The Library's hours vary throughout the year. Visit the Library's Web site or call 503-725-5874 for current hours.

Library courses are intended for any student who wishes to improve their research skills and understanding of library and information environments.

Courses

ULib 101

Library Research Skills (2)

Introduces library research skills with a focus on information use in the digital environment. Topics include finding, evaluating, and using information ethically. Emphasizes research skills needed for undergraduate research assignments.



Student Services



Division of Enrollment Management and Student Affairs

345 CRAMER HALL
503-725-5249
www.pdx.edu/studentaffairs

The quality of a student's university life is often one of the most significant factors that determine whether they will complete their courses of study. Enrollment Management & Student Affairs (EMSA) seeks to enhance students' experiences at Portland State University by establishing a vital co-curricular program and providing support services that help students attain their personal and academic goals.

EMSA supports PSU students throughout the continuum of their student experience. Beginning with admission and enrollment, continuing with support services and learning opportunities that enhance academic progress and personal growth, and culminating with the search for employment upon graduation, EMSA facilitates a student's journey through the university and beyond. EMSA is committed to enhancing academic and career success, encouraging engagement within the University learning community and community at large, supporting the development of diverse and global perspec-

tives, and promoting healthy living practices.

The mission of EMSA is threefold. First, EMSA facilitates and enhances student learning and success through intentionally connecting parts of the student experience into a whole. Next, EMSA enriches and complements student learning by providing opportunities for involvement in meaningful activities within the University community and the larger urban community. Finally, EMSA provides services that facilitate a student's transition to the University and that remove barriers to student success.

EMSA houses seven alignment areas including Academic & Career Services, Campus Recreation, Dean of Student Life, Diversity & Multicultural Student Services, Enrollment Management, Housing & Residence Life, and Student Health & Counseling. Each alignment leader reports directly to the Vice President for EMSA.

Within the unique setting of PSU as the major metropolitan university in Oregon, the programs, departments, and units within EMSA are uniquely situated to serve as focal points for student success, personal growth, development, cross-cultural understanding, community service, and leadership.

Advising and Career Resources

Advising & Career Services

402 University Services Building
503-725-4005
www.pdx.edu/advising-career-services

Advising and Career Services provides career services to all PSU students and alumni and

academic advising to undergraduates who are exploring or changing majors. Advising & Career Services offers the following services:

Career services:

- Workshops and individual assistance with career decisions, internships, job search strategies (i.e. resumes, cover letters, interview preparation) and graduate school applications
- Extensive information and resources on careers, employers, internships, and job search techniques
- Job fairs and on-campus recruitment
- CareerConnect, an online jobs database with FT professional positions, internships and PT jobs for students (on and off campus)
- Peace Corps recruiting

Advising services:

- Academic advising for undergraduates who have not yet identified a major or who are changing their major; freshmen are required to see an adviser during their first year
- Advising referrals to schools, colleges and academic departments (for undergraduates with identified majors)
- Coordination of the intervention for students on academic warning
- Facilitation of campus adviser trainings and adviser resources

Disability Resource Center

LOCATION: 116 Smith Memorial Student Union

CALL: 503-725-4150,

EMAIL: drc@pdx.edu

WEB: www.drc.pdx.edu

Reasonable Accommodation/ Access Policy

PSU students with disabilities are provided with reasonable accommodations that give them the opportunity for equal access to educational programs, activities, and university life. Prospective students are provided with reasonable accommodations to assist them in the application process.

The Disability Resource Center (DRC) works to ensure equal access to University courses, programs, facilities, services, and activities by providing students with documented disabilities reasonable accommodations, academic adjustments, auxilliary aids and services, training, consultation, and technical assistance.

Disability Resource Center

The mission of the Disability Resource Center is to collaborate with and empower Portland State University students with disabilities in order to coordinate support services and programs that enable equal access to an education and university life.

To accomplish this goal, the DRC provides support in the areas of advocacy, coaching, educational training, and a variety of accommodations for equal access to the educational process and campus at Portland State University.

The DRC serves students with temporary as well as permanent disabilities. Students who have documented disabilities that 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, requirements of the program, course or activity, and the documentation provided. For additional information please check our website or contact the DRC.

The DRC's Assistive Technology Center (ATC), located within the DRC in SMSU 116, features some of the latest technology-assisted communication software available for students with disabilities.

Learning Center

University Library, 2nd Floor
503-725-4448
www.pdx.edu/tutoring

The Learning Center strives to foster the learning process by empowering PSU students to accomplish their academic and personal goals.

To do this, the Learning Center provides a variety of academic support services for students:

- One-on-one peer tutoring for all PSU students who desire individualized academic assistance. We tutor in lower-division courses in math and statistics, the sciences, and world languages.
- College Success courses for all PSU students. These courses give students a collection of practical success tools in empowering them to create greater success in college and in life.
- Roads to Success program for new freshmen. Students are exposed to critical academic skills, student success and college adjustment strategies, resource referrals, and community building activities to help in the transition from high school to university.
- Academic coaching to help create measurable goals for academic success.
- Workshops and individual appointments.

All Learning Center programs except for Roads to Success are open to undergraduate, post-baccalaureate, and graduate students. The Learning Center is certified by the College Reading and Learning Association.

Campus Life

Dean of Student Life

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

The mission of the Office of the Dean of Student Life is to foster and celebrate student engagement, learning and success by

- Helping students navigate Portland State University;
- Cultivating student responsibility and leadership;
- Promoting a diverse and respectful learning community;
- Providing leadership for specific programs and services; and
- Advocating on behalf of all students.

The Office is responsible for the oversight of the following campus life programs and services:

- C.A.R.E. Team monitors, assesses, intervenes, consults, and refers regarding barriers to student success and well-being.
- Advising ASPSU Student Fee Committee
- Services for Students with Children
- Student Veteran Services
- Sustainability Leadership Center
- Student Activities and Leadership Programs
- Student Leaders for Service
- Student Legal Services
- Queer Student Services
- Women's Resource Center

Student Conduct

433 Smith Memorial Student Union
503-725-4422
conduct@pdx.edu
<http://www.pdx.edu/dos/codeofconduct>

The policies of the University governing the rights, freedoms, responsibilities and conduct of students are set forth in the *Portland State University Code of Student Conduct and Responsibility* which has been issued by the president under authority of the Administrative Rules of the Oregon State Board of Higher Education. Students may consult these documents by visiting our website at: <http://www.pdx.edu/dos/codeofconduct>. 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 integrity

The policy governing academic integrity is part of the Code of Student Conduct and Responsibility. Academic integrity is a cornerstone of any meaningful education and a

reflection of each student's maturity and integrity. The Code of Student Conduct and Responsibility, which applies to all students, prohibits all forms of academic misconduct, 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 collaboration, disclosure and receipt of academic information, and other practices commonly understood to be academic misconduct.

Resource Center for Students with Children

462 Smith Memorial Student Union
503-725-9878
www.pdx.edu/students-with-children
[facebook.com/StudentsWithKids](https://www.facebook.com/StudentsWithKids)

The Resource Center for Students with Children's mission is to support students with children in achieving life-balance that helps them stay the course to successful completion of their academic goals. We provide a variety of programs, including the Child Care Subsidy Program, a small emergency loan program, children's clothing closet, lending library with books related to children and parenting, and the Family Resource Room, which provides a relaxing gathering space for students with children. We also have frequent events, including Dads' Group, a student-led support group for student dads; The Enlightened Parent, a series of workshops with informational topics geared toward students with children; free family-friendly activities at least once per term; Season of Sharing, which provides holiday gifts and support to student families; FLOCK (Families Living On Campus With Kids) gives student families on and near campus a chance to connect with each other; and Kids' Night Out, a chance for parents to have a few hours to themselves while their children enjoy an evening of fun activities.

Queer Resource Center

458 Smith Memorial Student Union
503-725-9742
qrc@pdx.edu
<http://www.pdx.edu/queer/>

Portland State's Queer Resource Center provides students along sexuality and gender spectrums with the support they need to persist to graduation. We build conscious coalitions among sexuality and gender related organizations within PSU and the surrounding community to strengthen support structures across communities and identities. We identify and address gaps in campus services for students, staff and faculty along the sexuality and gender spectra. To make mentorship opportunities possible between the

Queer PSU staff and faculty and PSU students, the Queer Resource Center provides advocacy to students, faculty and staff in the pursuit of accessing full institutional benefits. We hold each other accountable to reflect the multiple and intersecting identities of LGBTQIAAP communities in our staff, programs, and volunteers. We make the needs of students, staff and faculty along sexuality and gender spectra a campus-wide priority by providing awareness, knowledge, and skills within campus departments.

The QRC is open to all students as an educational and social resource. We offer year-long programming serving trans students, queer/trans students of color and LGBTQIAAP-identified students.

Student Activities and Leadership Programs

119 Smith Memorial Student Union
503-725-4452
www.pdx.edu/salp/

Student Activities and Leadership Programs (SALP) provides student with the opportunity to join, create, and/or participate in student organizations. SALP facilitates cross-campus leadership trainings and conferences. SALP supports the Portland State Programming Board, the student-run program which organizes large-scale, traditional campus events.

SALP formally recognizes over 150 student organizations ranging in a diverse array of interest areas, including academic, honorary, arts and industry, Greek life, multicultural, political, service and advocacy, spiritual and student government. Participating in a student organization is the perfect way to gain out-of-class experience, to apply academic learning, and to connect to campus. For a complete listing of recognized organization and what they are doing, please visit the SALP Web site. Staff is available to help students find ways to connect, to help create new student organizations, and to provide resources, advising, and training to current student leaders.

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 spe-

cific-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. A group of five students may start a new group at any point in the year. Visit www.salp.pdx.edu to learn more about joining or starting a group. All recognized organizations can be contacted via the Student Activities and Leadership Programs office.

Student Leaders for Service

503-725-8132
www.pdx.edu/salp/student-leadership-for-service

Student Leaders for Service is a group of twenty-five students who work together throughout the year to encourage other Portland State students to serve in the community. Each member is placed at a community site where they work ten hours a week and host volunteer opportunities for other students. Student Leaders for Service also hosts service days once a term where you can come out for the day to do community projects with other student leaders. Students can also sign up for Alternative Spring Break where you can work at sites across the Pacific Northwest. Visit our website to learn how to become a year-long member, get involved in a day of service, or travel with us on Alternative Spring Break.

Women's Resource Center

Montgomery Hall Courtyard
503-725-5672
wrc@pdx.edu
www.pdx.edu/wrc

The Portland State University Women's Resource Center advocates for the best educational and campus experience for all members of our community. We accomplish this by advancing social justice, ensuring access to personal empowerment for all self-identified women, and by working toward a safe and healthy campus.

The Women's Resource Center is open to students of all genders. 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. We offer three programs:

- The Leadership In Action program supports volunteers interested in engaging in the work of the WRC. Opportunities are available for students at a variety of commitment levels. We offer internships working in our lounge, planning our events, working with our action teams around specific issues, and taking on special projects.

- The Empowerment Project provides support, classes, mentoring, and information to non-traditional women students: women of color, non-traditionally aged students, and veterans. The program is a resource for women both at the undergraduate and graduate level.
- The Interpersonal Violence Program supports students who are dealing with domestic or sexual violence in their own or their friend's life. The IPV Program also offers prevention programs, outreach and education.
- The Community offers a comfortable lounge and library for students to use for meeting, discussing, socializing, or studying. We host a number of events like weekly knitting circles, our much loved, Faculty Favorite Lecture Series, film screenings, and more.

Student Legal Services

M343 Smith Memorial Student Union
503-725-4556
<http://www.pdx.edu/sls/>
slms@pdx.edu

Student Legal Services (SLS) provides confidential and professional legal assistance to current PSU students on a wide range of legal issues including: auto accidents, bankruptcy, consumer issues, criminal and expungement, employment, family law, landlord/tenant issues, immigration, personal injury, small claims court, and traffic citations.

The mission of Student Legal Services is to encourage students' full participation in their academic endeavors by helping navigate obstacles to fulfilling educational and career goals. SLS pursues its mission through legal advice, legal representation, mentorship, community partnerships, and education designed to empower students.

Student Legal Services is available to PSU students currently taking four or more undergraduate credits or three or more graduate credits. If SLS legal staff accepts a case for advice and information only, SLS generally will not charge attorney fees to students. Limited attorney fees may be charged for court appearances on a student's behalf. Students are also responsible for paying court costs, court filing fees, and other fees or costs related to resolving the issue. SLS also provides free notary services and referrals to private attorneys, agencies, and community resources.

Events and Outreach

Commencement

commencement@pdx.edu
www.pdx.edu/commencement

Portland State University has a formal cap and gown ceremony at the end of the spring.

Spring Ceremony

The Spring Commencement Ceremony is a formal event held in the Rose Garden arena with approximately 2,000 students participating. As their names are read, each student crosses the stage to receive University-wide recognition and his or her diploma folder. Official diplomas are available later in the summer. The ceremony lasts approximately two and a half hours and is a ticketed event. Students receive up to four tickets at no charge. Additional tickets may be purchased for \$6.00. Students can register for the ceremony at www.pdx.edu/commencement.

The difference between Commencement and Graduation

"Graduation" and "Commencement" are terms of art at PSU. "Graduation" means actually fulfilling your degree requirements resulting in a diploma. In other words, "Graduation" is the technical obtainment of credits to receive a degree.

"Commencement" is the symbolic ceremony marking the closing of your academic career where you receive commendation for your hard work at PSU. It is an opportunity for you, your family, friends, and the PSU community to celebrate your accomplishment.

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 Ambassador Program

503-725-8240
www.pdx.edu/dos/student-ambassadors

Student Ambassadors serve as representatives of the University and the student body with visiting speakers, educators, and dignitaries, conducting campus tours, acting as liaisons between students, faculty, and administrators, performing volunteer com-

munity 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.

Campus Rec

1800 SW 6th Ave.
Urban Plaza
503-725-5127
campusrec@pdx.edu
www.pdx.edu/recreation

Campus Rec's mission is to inspire, educate and empower its members to lead active, supported, sustainable, and healthy lifestyles. Offering members the opportunity to participate in a variety of recreational activities in the areas of Aquatics, Fitness and Health Promotions, Intramurals and Special Events, Rec Clubs, Inclusive Rec and Community Service, and Outdoor Programs, Campus Rec has something for everyone at any level!

In addition to the expansive program offering, the Rec Center offers its members access to a variety of equipment, towel and locker service, personal trainers, outdoor equipment rentals, certification courses and complimentary drop-in fitness classes. Campus Rec is located in the Academic and Student Rec Center facility, right off of the urban plaza. Membership to the Rec Center is included in student tuition and fees and the facility is accessible with a photo ID.

Student Recreation Center (ASRC)

1800 SW 6th Ave.
Urban Plaza
503-725-5127
campusrec@pdx.edu
www.pdx.edu/recreation

The Gold LEED certified Student Recreation Center, home to Campus Rec, is located in the heart of campus in the ASRC (Academic and Student Rec Center) right off the Urban Plaza.

Designed to be accessible and sustainable, the facility includes over eighty pieces of cardio equipment, over one hundred pieces of weight training equipment, a thirty-two foot climbing wall, a six-lane lap pool, a ten-person spa, three exercise and activity rooms offering complimentary drop-in fitness classes, two wood-floor courts, one indoor multi-sport court with dasher boards, a 1/11 mile elevated running track, two locker rooms, two universal changing

rooms with showers, and an equipment checkout offering a full menu of items for use throughout the facility.

The Outdoor Program, located at 505 SW Harrison (SE corner of the ASRC) offers a variety of services that include year-round outdoor trips, an equipment rental center, climbing classes for the climbing wall, kayak roll sessions in the pool, outdoor courses, seminars and workshops, a volunteer program, and trip leader development program.

Membership to the Rec Center is included in student tuition and fees. The facility is accessible with a photo ID.

University Housing & Residence Life

The Broadway Building, Suite 210
625 SW Jackson Street
503-725-4375
housing@pdx.edu
www.pdx.edu/housing

The University Housing and Residence Life Student Services Office (UHRL Office) provides information about on-campus housing, housing contracts, building maintenance, and housing charges for prospective and current residents. The UHRL Office Staff members also lead housing tours Monday through Friday. The tour begins at 1:30 pm from Broadway 210.

The goal of the UHRL Office is to provide safe and desirable housing for students. A wide variety of living styles are available, including furnished single-occupancy sleepers, single and double-occupancy studios and one-bedrooms, and two-bedroom units for students with children.

There are many benefits to living on an urban campus. Portland state students living on campus experience everything Portland has to offer, whether they're buying fresh veggies at the Farmer's Market, studying in the Park Blocks, or riding the streetcar to Powell's City of Books. Residents can participate in the Residence Hall Association (RHA), grow their own food in the community garden and utilize student services at their convenience.

The Broadway Building and Stephen Epler Hall are the newest additions to the on-campus housing options. These structures have been awarded for their environmentally friendly construction and sustainability practices. Our newly renovated Blumel building reopened in Spring 2013. These one-bedroom apartments have new kitchen cabinets, counter tops, flooring, and an accent wall.

First-year college students age 19 and younger who choose to live on campus their first year are required to participate in the First Year Experience (FYE) program. FYE residents live on floors 3 – 7 of the

Broadway Building or 3 – 7 in Ondine. Students can choose to live on theme floors which include Health & Wellness, STEM (for students interested in Science, Technology, Engineering, and Math), or a Viking Floor. Students also have the option of choosing a community where they live with students in their FRINQ. Options for residential FRINQs include Sustainability, Race & Social Justice, Global Leadership, and Work of Art. Students in Urban Honors also have the option of living in the Honors community, located in Stephen Epler.

The Residence Life staff takes an active role in creating activities and attending to each individual need as it arises. Combined with Resident Assistants, residents have 24-hour access to staff to help with the smallest to the most complicated issues. Residence Life cultivates a community environment in collaboration with the approximately 2,000 students who reside in University-owned facilities. The Housing and Residence Life Maintenance staff are skilled and dedicated professionals who maintain and work within the ten housing buildings on campus.

Diversity Resources

Diversity and Multicultural Student Services

425 Smith Memorial Student Union
503-725-4457
www.pdx.edu/dmss

The Office of Diversity and Multicultural Student Services (DMSS) builds and strengthens a sustainable, diverse educational and co-curricular environment where all students have access and support to achieve their educational goals.

We provide structured support services to student populations whose access, retention, academic success, and graduation are most challenged by historical and contemporary inequities; provide a student-centered inclusive environment that enriches the university experience; and engage families and the community.

This office administers scholarship programs, provides general advising, advocacy, and counseling. Programs include the following TRiO programs: Student Support Services, Upward Bound, and Educational Talent Search. Students are also served through the Diversity Scholarship Programs, African American Student Services, Latino Student Services, and Native American/Alaskan Native Student Services. Three student cultural centers - the Native American

Student and Community Center (NASCC), La Casa Latina (LCL) and the Multicultural Center (MCC) – provide welcoming gathering space for co-curricular programs and community-building.

African American Student Services

425 Smith Memorial Student Union
503-725-9938
www.pdx.edu/dmss

The African American Student Services Coordinator is available to provide academic support services and connections to campus and community resources especially tailored to the needs of African American students. Services include academic services, community-building activities, mentoring, advocacy, and assistance with personal financial literacy, understanding financial aid awards, and identification of scholarship opportunities. The coordinator offers a college success course (by application) in the Fall to help new students in their transition to the University and supports these students through their first year and beyond, as needed.

Latino/a Student Services

425 Smith Memorial Student Union
503-725-9687
www.pdx.edu/dmss

The Latino/a Student Services Coordinator is available to provide academic support services and connections to campus and community resources to meet the needs of Latino/a students. The coordinator is bilingual (Spanish/English) and involves families to support program participants' academic success. The GANAS (Gaining Awareness and Networking for Academic Success) is a year-long transition program offered to first-year, first-time freshmen (by application).

Native American Student Services

Native American Student and Community Center
503-725-5348
www.pdx.edu/dmss

The Native American Student Services Program provides support for Native American and Alaskan Native students through general advising, guidance, advocacy and referrals to appropriate campus-based and Portland Metro resources, especially organizations serving Native American people. The coordinator also connects students to opportunities for Native American cultural enrichment and social activities, both on campus and in the community. The coordinator serves as a liaison to Tribes, Native American organizations, and educa-

tional institutions for individual students and the University.

Diversity Scholarship Program

425 Smith Memorial Student Union
www.pdx.edu/dmss/dmss

The purpose of the Diversity Scholarship Program is to expand and enrich Portland State's learning community by recognizing and supporting outstanding students from first generation and various cultural, ethnic and socio-economic backgrounds, with diverse talents, interests, and life experiences. The Diversity Scholarship Program is committed to helping students achieve their academic goals. The program promotes diversity and student participation in campus life through volunteerism and academic excellence.

Applications are available in September for all students that do not exceed 150 college credits (please see website for scholarship criteria). The annual deadline is February 1st and decisions are made by April 15th. Recipients will receive general advising, priority registration, peer mentoring, and assistance transitioning into PSU. Participants will be required to fulfill community service hours quarterly, attend academic workshops, and other community building activities. The scholarship is renewable and covers 12 undergraduate credits (excludes student fees).

TRiO – Student Support Services (SSS)

425 Smith Memorial Student Union,
 503-725-3815
www.pdx.edu/dmss/TRIO-SSS

TRiO - Student Support Services is Portland State University's federally funded academic and personal support services 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 if they have a need for academic support. The program provides academic counseling, financial literacy, scholarship assistance, skill development workshops, study spaces, computer lab, writing assistance, and referrals that are designed to help the students achieve their 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 if they feel they

will benefit from the additional academic and personal support the program provides. Applicants will be selected on the basis of their need for the educational services SSS provides and their desire to fully participate in the program's activities. Students interested in the program are invited to contact the SSS office.

TRiO - Student Support Services is a U.S. Department of Education Title IV TRIO program.

La Casa Latin@ Student Center

229 Smith Memorial Student Union
 503-725-6710
emagana@pdx.edu

La Casa Latina is a hub on campus where Latin@ students come together to build and connect with community, develop leadership skills, empower their Individual and collective identities, and find services that support academic success. The mission of La Casa Latina is to attract Latin@ students to Portland State University, support their academic success, and provide cultural, social and academic services and programs that enhance the quality of Latin@ student life. The center hosts events such as the Day of the Dead and Cesar Chavez Week. All students are welcome at the center to meet new people and learn about Latin@ culture.

Multicultural Center

228 Smith Memorial Student Union
 503-725-5342
multicul@pdx.edu
www.pdx.edu/mcc

The Multicultural Center (MCC) is a uniquely central 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 programs and events that promote student leadership development, co-curricular opportunities that celebrate cultural diversity, and serves as an informal gathering place for students to build community with other students, the campus, and communities in the greater Portland area. On-going programs include: Reflect & Connect; open lounge; annual events (M.L.K., Jr. Commemorative Week in January, MCC Open House, Roots Festival in May, Multicultural Student Graduation in June). Student organizations, academic units, and community groups collaborate to offer a rich array of educational and cultural activities open to all throughout the year.

Native American Student and Community Center

710 SW Jackson St.
 (Corner of Broadway and Jackson)
 503-725-9695
www.pdx.edu/dmss/nascc
[facebook.com/PSU.NASCC](https://www.facebook.com/PSU.NASCC)

The mission of the NASCC is to provide a "cultural home" where Native American, Alaskan Native and Pacific Islander students connect to other students, faculty, staff and community members in an inclusive and supportive environment. At the Center, students may build community, receive assistance in support of their academic goals, as well as explore and develop cultural identities and intercultural alliances. The Center currently houses 6 student groups, has a ten station computer lab, and quiet study space for students.

The Center's unique architecture, collection of art, and welcoming environment make it a great venue for many educational programs and activities sponsored by campus and community groups. Student groups, academic departments, and programs on campus partner with local Native American and non Native people to create an environment in the Center that is educationally and culturally enriching for the entire campus.

In addition the NASCC is available for lease (see website for leasing information).

For more information contact Rachel Cushman, NASCC Manager, rcushman@pdx.edu, p: 503-725-9697, f: 503-725-9699

Native American Student Services Staff and members of the Cultural Centers Programming Team Members are also housed in the NASCC.

Educational Talent Search

633 S.W. Montgomery
 503-725-4458
www.pdx.edu/ubets

Educational Talent Search is an educational access and information program sponsored by Portland State University, and funded through the U.S. Department of Education at \$313,994. ETS serves 700 students in the Portland and Hillsboro School Districts. A large percentage (over 67%) of our student population is comprised of under-represented ethnic minority students. Since 1993, 92% of our annual high school graduates enroll in college immediately after high school.

All students receive:

- Advice about academic, career, and vocational opportunities
- Counseling in motivation, self-awareness, decision making, and study skills

- Exposure to career opportunities, college campuses, & academic summer programs
- Weekend workshops and in-school sessions relevant to academic courses, study skills, computer skills, career choices, and opportunities for education beyond high school
- Assistance with SAT preparation and registration
- Guidance with college admissions and financial aid applications
- Referrals to other educational support services and community resources for participants and their parents

Upward Bound

633 S.W. Montgomery
503-725-4010
www.pdx.edu/ubets

Upward Bound, a college preparation program for high school students, has been hosted at Portland State University since 1976. Upward Bound, funded by the U.S. Department of Education at \$437,808, is a year-round program designed to improve students' academic and study skills in high school, to develop their career and educational plans, and to help them enter and succeed in higher education. Upward Bound serves over 105 low income, first generation high school students from the following schools: Franklin, Grant, Jefferson, Roosevelt, Madison, and Benson. To date, 95% of UB students stay in the program through high school graduation and since 2000, 70% of our students are still either in college or have graduated.

All students receive:

- Academic guidance and counseling on a year-round basis
- Daily tutoring in high school courses
- Semester-long courses for high school credit
- A 6-week summer academic program
- Assistance with career and college planning and financial aid
- Opportunities for summer work-study positions (up to \$900 for the summer)
- Opportunities to visit colleges and explore careers
- Technology skill-building: web design, photo editing, movie editing, Internet research skills

Ronald E. McNair Scholars Program

M302 Smith Memorial Student Union
503-725-9740

The Ronald E. McNair Scholars Program at Portland State University works with undergraduates 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.

The Ronald E. McNair Post-Baccalaureate Program is funded by a five-year \$1,155,000 US Department of Education grant. Portland State provides cost-share funds over the same period.

Enrollment Management

Admissions Requirements

U.S. Citizens and Immigrants (Domestic Undergraduate Applicants)

Application

Domestic students must submit the following information to the Office of Admissions.

- 1. Application form and nonrefundable fee.** Students may apply online, or obtain the application form at www.pdx.edu/admissions/apply. The application may also be obtained from the PSU Office of Admissions and at the counseling offices in most Oregon high schools and community colleges. To assure consideration for admission, the application should be submitted by the priority filing dates listed and must be accompanied by a nonrefundable \$50 application fee (fees subject to change without notice). 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 quarter 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 or through approved electronic means 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 SAT or ACT®.** Freshman applicants who have graduated from an accredited and/or standard high school within three years of Portland State enrollment must submit scores on the College Board SAT or ACT® that include a standardized writing examination. Similarly, transfer applicants with fewer than 30 earned quarter credits must also submit standardized test scores. Portland State requires the writing portion of either ACT or SAT I as part of its admission process. 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 at Collegeboard.org or ACT® at actstudent.org; or PSU Testing Services at pdx.edu/testing. Note: High school graduates 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 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 580 and a minimum score of 410 on each of the five subtests (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 1540 or higher on the combined critical reading, writing and math portions of the SAT or 22 on the 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. Applicants must satisfactorily (grade of C- or above) complete at least 15 units (one year equal to one unit) of college preparatory work in the following areas:

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 first-year algebra and two additional years of college preparatory mathematics selected from geometry (deductive or descriptive); advanced topics in algebra (through Algebra II), trigonometry, analytical geometry, finite mathematics, advanced applications, calculus, and probability and statistics, or courses that integrate topics from two or more of these areas. One unit is strongly recommended in the senior year. (Algebra and geometry taken prior to ninth grade will be accepted if posted on HS transcript.)

c. Science (3 units). Shall include at least a year in fields of inquiry based college preparatory science such as biology, chemistry, physics, or earth and physical science. Science courses that are "inquiry based" provide students the opportunity to apply scientific reasoning and critical thinking to support conclusions or explanations with evidence from their investi-

gations. It is strongly recommended that one year be taken as a laboratory science and that a total of three years of science be taken.

d. Social Studies (3 units). Shall include analysis of societal issues and events. It is strongly recommended that study includes knowledge and use of geographic information, patterns of United States history, patterns of human history, structures and systems of US Government, and analysis of economic systems.

e. Second Language (2 units). Shall include demonstrated proficiency equivalent to two years of the same high school-level 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 D- or better two quarters or two semesters of college-level second language
- Pass an approved proficiency exam

**American Sign Language qualifies as a second language.

Students failing to meet the Second Language Proficiency requirement at the time of admission may be admitted, but will not be able to earn an undergraduate degree at Portland State University until the second language requirement has been completed. Students must provide official high school or college transcripts to demonstrate the Second Language Proficiency Requirement has been met.

The second language requirement only applies to applicants graduating from high school in 1997 or later.

For a complete list of proficiency options available for meeting the second language requirements, please contact the University's Office of Admissions, or view the OUS Second Language policy at www.ous.edu.

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. Students who do not meet the 3.00 GPA requirement may be admitted based on a combination of GPA and test scores, as seen on this website: www.pdx.edu/admissions/minimum-admission-requirements-freshmen.

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 fewer than 30 transferable credits of college work must also meet the freshman admission requirements.

Writing proficiency requirement. To be admitted as a transfer student, applicants must satisfactorily complete Writing 121 or the equivalent with a C- or better.

Second language proficiency requirement. All students must meet the second language proficiency requirement described above in 2e.

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.

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 for a waiver of this policy.

More information on transferring to PSU is available at www.pdx.edu/transferstudent.

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:

- April 1 for fall term
- October 1 for winter term
- February 1 for spring term
- April 1 for summer term

Applications will be considered for all terms subject to department and/or University restrictions and/or course avail-

ability. 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 International Admissions. All documents submitted become the property of PSU and cannot be photocopied, returned, or forwarded to third parties.

- 1. Application form and \$50 nonrefundable application fee.** The application and nonrefundable application fee are valid for one academic year only. The \$50 fee cannot be waived.
- 2. Official transcripts.** To be considered official, transcripts must arrive in the Office of International Admissions 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.
- 3. Proof of English language proficiency** (as described below).
- 4. 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.)
- 5. Proof of current immigration status** (if already residing in the United States).
- 6. 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 start term can be changed 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.

Admission Requirements for International Students

Applicants must demonstrate an appropriate level of academic preparation.

Freshman: completion of U.S. academic (university preparatory) high school or secondary school equivalent as determined by the Office of International Admissions 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 International Admissions. 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 qualifying TOEFL, IELTS, or PTE scores. See minimum qualifying scores below.

English language proficiency requirements may be found at <http://www.pdx.edu/admissions/english-language-proficiency-requirements-undergraduate>.

Information on the international TOEFL is available at www.ets.org/toefl. Information on the PSU institutional TOEFL is available at www.pdx.edu/admissions/portland-state-institutional-toefl-exams.

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 both credit and non-credit classes. 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.pdx.edu/esl, for additional IELP requirements.

Residency Classification

In Oregon, as in all other states, tuition at publicly supported four-year universities is higher for nonresident students than for res-

ident 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” at <http://www.ous.edu/stucoun/prospstul/residency>.

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.

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. At PSU: www.pdx.edu/registration/residency-requirements.

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.

Undergraduate 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 contact the Office of the Registrar to update contact, biographical, and educational information. Official transcripts must be submitted from each institution attended since leaving PSU.

Transfer credit policies

Accredited colleges and universities. The Office of the Registrar 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 the Registrar, are authorized to evaluate credits transferred from unaccredited institutions or foreign colleges and universities after a student has been admitted to PSU. For specific course equivalency, students may be asked to provide catalog descriptions and/or documents certifying course content. 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. For more information go to www.pdx.edu/transferstudent/co-admission. Applicants should contact Clackamas Community College at 503-594-6100, Clark College at 360-992-2058, Clatsop Community College at 503-338-2411, Mt. Hood Community College at 503-491-6422, Portland Community College–Sylvania at 971-722-4519, Chemeketa Community College at 503-589-7652, 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) or an Associate of Science Oregon Transfer-Business (ASOT-B) 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 Associates may not satisfy all requirements for admission to professional schools. Please check with each school for specific admission requirements.

Vocational and technical credits. 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.

Correspondence credit. A maximum of 60 correspondence credits is acceptable in transfer from regionally accredited 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 one of 174 institutions in other areas of the nation for up to one academic year. Students pay in-state tuition at host school or current PSU tuition. Call 503-725-3511 or go online to www.pdx.edu/admissions/national-student-exchange for information.

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.

Postbaccalaureate status

Students seeking admission who have earned an accredited baccalaureate degree, who have not been admitted to a graduate degree program may be admitted and enroll at the post baccalaureate level. These students are admitted to Portland State to earn a second bachelor's degree, certificate, complete prerequisites for admission to graduate school, or take other academic credit. PSU students who have completed an undergraduate degree who wish to complete a second undergraduate degree or take 9 or more credits during fall, winter or spring terms must be admitted to postbaccalaureate status. Postbaccalaureate students are subject to all academic policies.

Student orientation programs

503-725-5555

www.pdx.edu/orientation

The Office of Admissions and New Student Programs coordinates an orientation program for all undergraduate students new to PSU. All newly admitted undergraduate students are required to attend a new student orientation session prior to registering for courses.

After admission to PSU, each undergraduate student must participate in a one-day orientation session prior to the beginning of his or her first term. An advance tuition deposit of \$200 is required to sign up for new student orientation in the fall 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

Viking Days is part of the orientation 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 email to orientation@pdx.edu or view the Web site at www.pdx.edu/orientation.

Student Records, Registration and Enrollment

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, 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 the Registrar or online at www.pdx.edu/registration/student-records-privacy.

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 policies 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.

Part-time students/non-degree students

Part-time and non-degree 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 Online *Class Schedule* is available at www.sa.pdx.edu/soc.

Part-time students. 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.

Non-degree/non-admit students. A student may take a maximum of 8 credits in

fall, winter and spring terms without applying for formal admission. A Non-Degree Entry form is used to add the student to the registration system. There is a one time, nonrefundable fee. Non-degree students do not qualify for financial aid nor do they receive transfer evaluations. Non-degree students are allowed to preregister after admitted students. Students may apply online, or obtain a Non-Degree Entry form at www.pdx.edu/admissions/apply.

Students who wish to take 9 or more credits in fall, winter, or spring terms must be formally admitted to the University. Students who plan to earn a degree at PSU should be admitted formally as soon as possible. Regardless of how many credits are earned while in non-degree status, there is no guarantee of admission. Formal admission is required to earn a degree.

Enrollment process

Registration. Students who have been formally admitted or who have filed a Non-Degree Entry form may register for classes online at www.banweb.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. A current, detailed listing of term course offerings can be found in the online *Class Schedule* at www.sa.pdx.edu/soc. Detailed instructions for registration, priority registration dates, drop and add deadlines and academic calendar can be found online at www.pdx.edu/registration/academic-calendar. The schedule is available approximately two weeks before the beginning of classes for winter and spring, and available in May for the following fall term.

The academic regulations which govern drops and withdrawals are described in detail under "Grading System for undergraduates" on page 41. 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 Academic Calendar at www.pdx.edu/registration/academic-calendar.

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) from appearing on the stu-

dent'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.

Academic Advising

All new undergraduates, both freshmen and transfer students, are required to attend a New Student orientation: Advising & Registration session (see page 36) to learn about Portland State University and its academic curriculum and to meet with academic advisers.

First-year Advising Requirement: All newly admitted undergraduates are required to receive academic advising from their major department during their first year in order to register for the following fall term. For example, during the 2013-14 academic year newly admitted students must receive advising from their department, based on the department's specific advising plan, in order to be able to register in May 2014 for the following fall term.

Students who have not chosen a major will be advised by Advising and Career Services. Students in pre-professional programs (e.g. education, medicine, nursing) may receive their advising from either the major department or the College of Liberal Arts and Sciences Advising Center. Students should contact their major department, their college or school advising center, or the Advising and Career Services office to clarify their advising options.

Missed Class Policy

Purpose: This policy is to provide undergraduate students who miss class or examinations a process to make up examinations or other graded in-class work, unless it can be shown that such an accommodation would constitute an unreasonable burden on the instructor.

Rationale: Portland State University recognizes that students carry many responsibilities with them into the classroom, which both enrich their educational experience and make it more challenging. These include university-sanctioned activities in which the student serves as a representative to the university such as student congress, athletics, drama, and academic meetings.

Applicability:

- Undergraduate students involved in university sanctioned or other legitimate activities, such as illness and family emergency.
- Activity program directors.

- Instructors of students who participate in university-sanctioned activities, including faculty, academic professionals, administrative staff, and teaching assistants.

Policy: It is the responsibility of each instructor to determine and publish the class attendance policy in the course syllabus and distribute to the enrolled students at the beginning of the quarter. The instructor's class attendance policy supersedes request for approved absences. It is the responsibility of the student to inform the instructor of absences due to university-sanctioned events or personal responsibilities in writing at the earliest possible opportunity. If a student must miss class due to an unforeseen event, the student must inform the instructor of the reason for the absence. Absences not cleared with an instructor before the specific class event (exam, presentation, assignment due) may require a document from the relevant authority (e.g., coach, employer). If the instructor decides that the absence is justifiable, then he/she should attempt to provide opportunities for equivalent work. When absences are approved beforehand by the student and instructor, the instructor will allow students to make up missed work and/or give an option to attain attendance points. When there is a dispute between students and instructors over the opportunity to make up work or attendances, the issue will be adjudicated by the chair of the department and then (only if needed) the dean of that school or his/her designee. The student may not place any undue burden on the instructor to provide opportunities to make up course work due to excused absences.

Senior citizen enrollment

In compliance with Oregon House Bill 2011, PSU waives tuition for courses audited by an Oregon resident 65 years of age or older if:

- 1) space is available after degree-seeking students have registered
- 2) the department and instructor approve, and
- 3) the auditing student is a non-degree student registered for 8 or fewer credits.

The tuition waiver does not apply to Self-Support courses. One time administrative fees and other course fees for materials and online access may apply. The Senior Adult Learning Center (SALC) in the Institute on Aging manages the audit enrollment for senior learners and provides advising and enrollment support. Location: 113A Urban and Public Affairs Building

Undergraduate programs

Portland State University is committed to providing its students with maximum oppor-

tunities 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, a Bachelor of Fine Arts, or a Bachelor of Music degree with one or more majors. See the "Programs of Study" chart on page 7 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 Fine Arts, Bachelor of Music, or Bachelor of Science requirements, and (4) requirements for a major. Students majoring in Liberal Studies or completing the Honors Program do not need to meet the general education requirement. Specific requirements for a baccalaureate degree are detailed on page 39. 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 which is a concentration of courses in one of a variety of specialty fields and may be awarded upon graduation, or as a stand alone credential as a postbaccalaureate student.

A minor which is a concentration of courses in one of a variety of fields of study and may be awarded only with a baccalaureate degree.

For a list of available certificates and minors, see Program of Study chart on page 7.

A nondegree preprofessional program in chiropractic, clinical laboratory science, dental hygiene, dentistry, law, medicine, naturopathic medicine, nursing, occupational therapy, optometry, pharmacy, physical therapy, physician assistant, podiatry, radiation therapy, teacher education, and veterinary medicine.

Veterans Services and Benefits Certification

503-725-8380

Most programs at Portland State University are approved for the training of veterans. Each term, after registration, veteran students intending to use their education benefits must submit a veterans certification form to the Veterans Services Office in 104 NH. Course adds, drops, withdrawals, class cancellations and changes of program made after submitting a veterans certification form must be reported as soon as possible to the Veterans Certification Office.

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 the Office of the Registrar 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). No Pass, 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' certification office, 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 office.

Failure to maintain satisfactory progress standards at Portland State University will result in the termination of G.I. benefits.

Deployment policy. PSU follows the Oregon University System Military Duty Refund Policy which states that "any stu-

dent with orders to report for active military duty may withdraw at any time during the term and receive a full refund. If sufficient course work has been accomplished and the instructor feels justified in granting credit for the course work completed, credit may be granted and no refund will be given.”

The Office of the Registrar will work with students on a case-by-case basis to determine the best course of action. Students called to active military duty generally have the following options:

- Full withdrawal from all courses at any point during the term without academic or financial penalty, with full tuition refund.
- Partial withdrawal from some (but not all) courses at any point during the term without academic or financial penalty. Students who have completed a significant portion of their course work may be eligible to receive the grades earned in courses up to that point in time and/or request incomplete grades according to existing guidelines. Tuition would be refunded for withdrawn courses.
- No withdrawal from any courses. Students who have completed a significant portion of their course work may be eligible to receive the grades earned in courses up to that point in time and/or request incomplete grades according to existing guidelines. No tuition would be refunded.

Decisions as to which option is best for the student will depend on the student's personal details, the time remaining in the term, the portion of coursework completed at the time of military activation, and the judgment of the instructors. Students called to active duty who want to drop courses or discuss other options, should bring a copy of their orders to the Veterans Services Office, NH 104, and speak with a Veterans Certification Officer.

Degree Requirements

To earn a baccalaureate degree a student must complete (1) University requirements, (2) University Studies - General Education requirements, (3) the Writing Requirement, (4) specific requirements for the Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Music, or Bachelor of Science Degree, and (5) requirements for a major.

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

1. University Credit Requirements/Limitations

- Minimum number of credits (lower-

division plus upper-division):180 (some programs require more than 180 credits)

- Minimum number of upper-division credits (300- and 400-level):72
- 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: (excluding credit by examination) 45 of the final 60 or 165 of the total credits presented. Restriction: At least 25 of the last 45 credits must be for differentiated grades45.
- 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
- Maximum number of Physical Education activity credits that may be counted for graduation:12
- Maximum number of Cooperative Education credits that may be applied toward degree requirements:12
- Maximum number of English as a Second Language (ESL) credit that may be applied toward degree requirement24

Note: to apply, credit must be at the advanced or academic college-level of study or above which is defined as equivalent to PSU "level 4" courses or above.

2. University Studies (General Education Requirement)

Not required for Liberal Studies majors or Honors Program. (Honors Program general education requirements satisfied with specific Honors courses.)

The purpose of the general education program at Portland State University is to enable students to acquire and develop 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 www.pdx.edu/unst/ 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 30-89 quarter credits of transfer work are required to complete the University Studies program beginning with Sophomore Inquiry as follows: 30-64 credits, three courses; 65-74 credits, two courses; and 75-89 credits, one course. (The upper-division cluster must be linked to one of these Sophomore Inquiry classes.)
- Transfer 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.

3. University Writing Requirement – 2 college-level composition courses

Students must complete two college-level composition courses or their approved equivalents. The requirement may be satisfied in one of the following ways:

- Freshmen students admitted to PSU having earned 0-29 transfer credits meet the requirement by completing the first two years of University Studies or University Honors;
- Students admitted to PSU having earned 30-89 transfer credits meet the requirement with WR 121 (required for transfer admission) and the requisite number of Sophomore Inquiry courses determined by placement into University Studies or University Honors. (The WR 121 requirement may also be satisfied by passing the WR 121 Challenge exam, which exempts students from the course);
- Students admitted having earned 90 or more transfer credits have four options for meeting the requirement:
 - o Transfer into PSU with an approved equivalent of WR 121 plus one approved composition course for which WR 121 (or its approved equivalent) is a pre-requisite;
 - o Transfer into PSU with two approved composition courses for which WR 121 (or its approved equivalent) is a pre-requisite;
 - o Complete WR 121 plus an additional course from the following PSU course list: WR 200, 211, 222, 227, WR 300, 323, 324, 327, 333, 394, WR 400, 420 or a 4-credit Writing Intensive Course (WIC).
 - o Complete any two courses from the above PSU list. (The Challenge exams for WR 121 and WR 323 may also be used to satisfy the requirement.)

This requirement is in effect for the 2012-13 catalog. Students admitted prior to Fall 2012 may speak to an adviser about whether to use an older catalog.

4. Requirements for Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Music, Bachelor of Science Degrees

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 <http://www.pdx.edu/admissions/college-level-exam-program>); b) in other languages regularly taught by the Department of World 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 World 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 language other than English. Such students may not enroll in first- or second-year courses in the language in which they received their secondary education. (See page 318).
- For the Bachelor of Fine Arts degree: Students must complete the program of art practices as prescribed by the Department of Art.
- 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 integrated or associated laboratory or field work. Unless otherwise specified, only courses within 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), Communication, Conflict Resolution, English, World Languages and Literatures, Music, Philosophy, Speech and Hearing Sciences, Theater Arts, Writing.
- The science academic distribution area consists of undergraduate courses from the following: Biology, Chemistry, Environmental Science and Management, 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 (CCJ 220 and 330 only), Economics, Geography, History, International Studies, Native American Studies, Political Science, Psychology, Social Science, Sociology, Urban Studies and Planning, Women's Studies.

5. Major Requirements

For major program requirements see description in individual department sections.

Concurrent Degrees

Students may receive two different Bachelor's degrees in two different major programs at the same time by: 1) meeting the requirements in the specific Bachelor's

degree (i.e. BA, BS, BFA, BSW, BM, et. al.) and in each major, 2) earning 36 credits beyond the 180 minimum required for a single Bachelor's degree (i.e. 216 credits total), and 3) meeting the PSU Residence Credit requirement by completing 45 of the last 60 or 165 of the total 216 at PSU.

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).
- 2a. 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
- d. Bachelor of Fine Arts degree: if the first degree was not a B.F.A. students must complete program in art practices as prescribed by the department.
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 in the U.S., English-speaking Canada, Great Britain, Ireland, Australia, or New Zealand 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 in the U.S., English-speaking Canada, Great Britain, Ireland, Australia, or New Zealand must satisfy the Wr 323 requirements before completion of a certificate program.

Catalog eligibility and degree requirements

To earn an undergraduate degree, a student must meet the degree and major requirements published in an annual PSU Bulletin (catalog) for which the student is eligible and which is still valid at the time of the student's graduation. This applies to a first bachelor's degree, subsequent bachelor's degrees and to certificates earned by undergraduate and postbaccalaureate students.

Catalog eligibility rules: Students may select the requirements of the PSU catalog in effect during the year they first enrolled at any accredited, postsecondary institution, or any subsequent year, regardless of whether the student was enrolled or not, as long as the student graduates within seven years of the year selected.

Seven-year rule: The requirements in any Bulletin (catalog) are valid for seven years. Specifically, a catalog is valid through the summer term following the seventh academic year after issuance of the catalog. Example: The 2013-14 catalog requirements will expire at the end of summer term 2020.

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 pro-

cess 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 online at www.pdx.edu/registration/forms or from the Registration window, Neuberger Hall lobby.

26 or more credits: Petition to Academic Requirements Committee. Forms are available online at www.pdx.edu/registration/forms or from 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—Non-attendance and No basis for grade
 M—Missing grade/No grade received

Pass/No Pass Grading Options. The online *Class Schedule* 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 student'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 seventh 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 online at www.pdx.edu/registration/academic-calendar. 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 second 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 seventh week. A student withdrawing in the third through the seventh week will have a "W" recorded on the transcript.

A student cannot withdraw after the seventh week without approval of the Deadline Appeals Committee. A "W" is recorded if the petition is allowed.

Deadline dates for drops and withdrawals are found in the academic calendar pub-

lished online at www.pdx.edu/registration/academic-calendar. Date of withdrawal is the date it is received by Registration.

X Grade: Non-attendance and No Basis for Grade. The X grade is used when there is little or no attendance and no work/performance upon which to base an academic evaluation. X grades cannot be changed after initial submission and other grades cannot be changed to X except in cases of bona fide grading error as documented by instructor, requiring department chair approval. X grades carry no credit and are not included when calculating GPA.

M Grade: Missing Grade. M grades are automatically assigned by the system when grades have not been submitted to the Office of Registrar by the grading deadline. M grades will change to a grade of X, one term after the initial term. Once converted to an X, grade cannot be changed except in cases of bona fide grading error as documented by instructor, requiring department chair approval. M grades carry no credit and are not included when calculating GPA.

Non-Completion of Course. 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 the Registrar 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. Further details on academic standing can be found at www.pdx.edu/registration/academic-standing.

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.

President's List and Dean's List Awards

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 with a notation on the student's academic transcript.

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 Record Sealed After Degree Earned

Portland State University academic records are sealed thirty days after the conferral of a degree. After this date, changes to majors and minors, addition of departmental honors, removal of incompletes, grade changes, changes to degree posting, or other changes to an academic record cannot be made.

Academic standing policy

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 (including PSU and transfer work) whose cumulative PSU GPA falls below 2.00 will be placed on academic warning. A registration hold will also be applied to the student record until he/she has participated in a mandatory intervention facilitated by Advising and Career Services (formerly Undergraduate Advising and Support Services). Students on academic warning are restricted to registering for 13 or fewer credits per term.

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.

Students on academic probation are restricted to registering for 13 or fewer credits per term.

Academic Dismissal - Students on academic probation will be dismissed 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

1. Grade changes or removal of Incomplete grades do not change academic standing status.
2. Academic standing status in the current term may be changed by engaging the repeat policy, however repeating courses will not retroactively change the status of a past term.
3. Students who are academically dismissed from PSU are not permitted to register either full-time or part-time (including 1-8 credits)
4. When evaluating undergraduate academic standing, only PSU undergraduate credit is considered.
5. 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 in one of two ways. One is to petition and be approved for reinstatement by the Scholastic Standards Committee. Petitions for current term reinstatement must be returned to the Office of the Registrar prior to the beginning of the term for a timely decision. Alternately, conferral of an accredited Associate's or Bachelor's degree will constitute automatic reinstatement to the University. An official transcript with the degree posted must be presented to the Office of the Registrar. Reinstated students are given probation status.

Graduate Students and Postbaccalaureate Graduate Students

Graduate Academic Standing is administered by the Office of Graduate Studies. See the Graduate Studies section of this *Bulletin* for policy details.

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

CREDIT BY EXAMINATION

I. Portland State University Courses

Prerequisites for Credit by Examination (PSU courses)

- Students must be formally admitted to Portland State, and
- Be currently registered or have completed one Portland State course.

Guidelines governing Credit by Examination (PSU courses)

- 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.
- Students should contact the appropriate departments, college, or schools to determine the availability of particular courses for credit by examination.
- 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.
- Credit earned by examination may not be received in a course which:
 - Duplicates credit previously earned by a student, or
 - Is more elementary, as determined by departmental, college, or school regulations, than a course in which the student has already received credit.
- A student may attempt to acquire credit by examination only once for any course.
- 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.
- 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).
- Credit by examination does not count

toward residence credit.

- Credit by examination is not governed by the GPA Repeat Policy.

Application for Credit by Examination (PSU courses) and cost

- Students wishing to take examinations for Portland State courses may obtain an application with detailed instructions from the Office of the Registrar (Neuberger Hall lobby).
- The fee for credit by examination is currently \$80 per course examination. Fee subject to change.

II. CLEP Examinations

The College Level Exam Program (CLEP) offers nationally normed examinations that assess college level learning in both specific subject/disciplinary areas, as well as general learning. Once a student has been admitted and enrolled at PSU, the university will award college level credit for approved exams, based on students earning specific, minimum scores. The list of approved exams, along with the required exam scores and credit amounts awarded can be found at www.pdx.edu/admissions/college-level-exam-program.

In order to be awarded credit at PSU, students must request an official CLEP transcript be sent to the Office of Admissions, Portland State University, PO Box 901, Portland, OR 97207-0901.

Learn more about CLEP and download the transcript request form from the CLEP website at <http://clep.collegeboard.org/about/score>. Send request for CLEP transcripts CLEP Transcripts Request Service

P.O. Box 6600, Princeton, NJ 08541-6600. Phone: 800-257-9558 (8 a.m. to 6 p.m., ET, Monday-Friday) if ordering with a credit card (American Express, MasterCard or VISA only). Military personnel should call 877-471-9860 (toll free) or 651-603-3012 to order a military transcript.

Please include:

- Completed Transcript Request Form
- \$20 for each requested transcript
- Your name and date of birth
- Exam title, test center, and test date
- Where you want the transcript sent

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 Student Health and Counseling Center or with other recognized CLEP testing centers. The Testing Office supplies descriptive brochures and other information on CLEP examinations.

The PSU Testing Office also supplies information and administers CLEP examinations to nonadmitted or nonenrolled students (www.pdx.edu/testing/college-level-exam-program-clep). Fees for CLEP examinations

are set by the Educational Testing Services and are subject to 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 and may be found in the AP Table at www.pdx.edu/admissions/advanced-placement-program. The amount of credit awarded is governed by the Oregon University System, and the exact course equivalency is determined by the PSU department. 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.

IV. International Baccalaureate

Students enrolling at Portland State who earn their IB diploma with a score of 30 or above will receive a total of 45 college credits and sophomore class standing. Credit for International Baccalaureate (IB) examinations is awarded only for a score of 5 or higher. See IB table at <http://www.pdx.edu/admissions/international-baccalaureate>.

- 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.
- You may download a transcript request form at www.ibo.org/ibal/transcripts/

Graduation & Commencement Application Process

Graduation means that a student has been certified by the University as having met all degree requirements. Certification occurs approximately 4-6 weeks after final term grades are posted. At that time the degree is

entered on the graduate's transcript. The degree statement on the transcript serves as evidence of degree awards.

Receiving Diplomas. Diplomas are generally available at the end of the term following the graduation term. All degree recipients are notified by mail when diplomas are available, either for office pick-up or mailing.

Filing an Application for Degree

503-725-3511

To earn a degree, students must be admitted to PSU and file an application for degree with the Degree Requirements unit within the Office of the Registrar. The undergraduate degree application form is online at www.pdx.edu/registration/forms. The deadline to file the undergraduate degree application is at the end of the second week of the term immediately preceding the graduation term. Example: If graduating at the end of spring term, the undergraduate application must be submitted by the end of the second week of winter term. The deadline to submit a graduate degree application is at the end of the first week of the graduation term.

Students are encouraged to meet with their academic advisers to review their progress towards a degree prior to submitting a degree application. General University degree requirements are certified by the Degree Requirements unit in the Office of the Registrar, 104 Neuberger Hall. Final approval of the requirements for the major rests with the department, college, or school offering the major program. Students bear final responsibility for ensuring that they have taken all courses required to complete their degree/major requirements. All University degree, general education, and major requirements must be satisfied before a degree will be awarded.

Commencement is a celebration! It is a ceremony for students, their family, friends, and the PSU community to commemorate their academic achievements. Except for doctoral students (who must be certified by the Office of Graduate Studies to participate), the commencement ceremonies are open to students who have applied for degree clearance and have registered for the commencement ceremony within the specified deadlines. Participation in commencement does not mean that a student has graduated, nor do students receive diplomas on that day.

Portland State has a formal cap-and-gown ceremony at the end of spring term.

To register for the commencement ceremony please visit www.pdx.edu/commencement. An application for degree must be filed with the Office of the Registrar prior to registering for the ceremony.

Appeals and grievances

Grievances and requests for exceptions to University policies and 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 Dean of Student Life, 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. Petition forms may be obtained online at: www.pdx.edu/registration/forms.

Deadline Appeals Board

A student may petition this board to be exempted from published registration deadlines for the current term. 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 online at www.pdx.edu/registration/forms or from the Office of the Registrar in the Neuberger Hall lobby. For further information students may call 503-725-3511.

Scholastic Standards Committee (SSC)

The SSC develops and recommends academic standards to maintain the integrity of the undergraduate program and academic transcripts of the University; develops, maintains and implements protocols regarding academic changes to the undergraduate transcript; reviews and rules on petitions for any retroactive change to the academic record such as a grade option change, drop, add, and extension of an incomplete beyond the one year deadline; and adjudicates student petitions for academic reinstatement to the University. Conferral of an accredited Associate's or Bachelor's degree constitutes automatic reinstatement to the University. An official copy of a transcript with degree posted must be presented to the Office of the Registrar.

Petition forms may be obtained online at www.pdx.edu/registration/forms or at Admissions, Registration & Records counter in lobby of Neuberger Hall. For further information, call 503-725-3511.

Financial aid and scholarships

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

The professional staff in the Office of Student Financial Aid and Scholarships 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 Applying for Financial Aid. Note: All tuition and fee costs are subject to change by the Oregon State Board of Higher Education.

The Office of Student Financial Aid and Scholarships provides qualified students with financial aid in the form of loans, grants, and student employment.

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 on the Web Worksheets 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 Office of Student Financial Aid and Scholarships at any

time during the year, with priority given to admitted applicants who submit their FAFSA in January and who provide all requested information promptly. It is recommended that students apply by January 15th each year. It is not necessary to wait for formal admission to the University before submitting the financial aid application.

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. Students also must meet the Satisfactory Academic Progress Policy requirements described at the end of the Financial Aid section. The student must be in an aid-eligible 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), TEACH grant, Federal Perkins loan, Federal Work-Study, and Federal Stafford Loan programs. 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 and Federal Graduate PLUS 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 www.banweb.pdx.edu, and students will accept or decline their aid offer online.

Delivery of aid. Once accepted, and all requirements have been completed, available financial aid will be automatically credited to pay tuition and other PSU charges. Excess financial aid and other refunds are disbursed through Higher One. 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.

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. Website: www.pdx.edu/finaid/work-study.

Aid Disbursement Policy. Financial aid can be disbursed to a student's account as early as ten days prior to the start of a term. Aid will only disburse at this time if a student's enrollment level matches their award level for the term, and there are no outstanding requirements. Our ability to disburse aid prior to the beginning of a term means that we must have a "census date" that corresponds to a student's official aid eligibility for a term. Census dates for the 2012-13 aid year and minimum enrollment requirements for the various sources of aid can be found on the Office of Student Financial Aid and Scholarships Web site at www.pdx.edu/finaid/disbursement/ under Eligibility for Aid, and then Disbursement.

At the census date of each term, student's enrollment is locked. Their financial aid for that term is then adjusted, based on the enrollment level at that time. When a reduction in aid is required due to a student's enrollment level on the census date, the reduction usually creates a balance due on the student's PSU account. If there is a tuition refund because of dropped credits, the tuition refund will be used to reduce the balance due on the student's account.

A student whose census date enrollment is less than half-time is not eligible for any federal student loans. In these cases, the entire loan amount for the term will be returned to the lender. The return of loan funds to the lender creates a bill on the student's PSU account, but also reduces the outstanding principal balance due on the student loan.

Any current term aid disbursed after the census date will be based on the student's enrollment on the census date, or their actual number of credits enrolled at the time of disbursement, whichever is less. Credits added after the census date cannot be used to increase aid eligibility.

Retroactive aid (aid for a term that has ended prior to disbursement) must be disbursed based on completed grades/credits, or census date registration, whichever is less. This includes retroactive grants and loans. Grades that are considered "complete" for disbursement purposes are: A, B, C, D, P, I or IP.

Withdrawals—Official/Unofficial. Please see the annual Registration Guide or visit www.pdx.edu/registration for the university policy regarding dropping classes and tuition refunds.

Students who withdraw completely during the term and are receiving federal and/or state 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.

Federal student aid recipients who begin attending classes and who cease attending or performing academic activities prior to the end of the quarter are considered by the federal government to have Unofficially Withdrawn. This will usually be reflected by a student receiving all X, M, NP, W or F grades for a term. If University records indicate that student did begin attending classes but subsequently unofficially withdrew, the University will consider the Unofficial Withdrawal date to be the midpoint of the quarter (unless documentation exists of an earlier or later date of attendance/academic activity by the student). If no attendance or academic activity can be documented, the Unofficial Withdrawal student must repay the entire amount of aid disbursed for that term.

If University records show a federal student aid recipient never attended a class and/or performed an academically related activity for a quarter or term, then the recipient never established eligibility for any aid funds that may have been disbursed for that quarter or term. In addition, any student aid recipient who drops all classes or voids his/her schedule with an effective date prior to the first day of class for a quarter or term did not establish eligibility for any funds that may have been disbursed for that quarter or term. In either case, the student aid recipient must repay the entire amount of aid disbursed for that quarter or term. Website: www.pdx.edu/finaid/withdrawing/

Award sources

Additional details on the federal aid programs are available in The Funding Education Beyond High School Guide, published annually by the U.S. Department of Education. Students can also find the Financial Aid Guide at www.pdx.edu/finaid under Forms and Publications. This 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 GRANTS

Federal Pell Grants. This federally funded grant program is designed to provide assis-

tance 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. Students have a lifetime limit of the equivalent of 6 years of full time enrollment for Pell Grant eligibility.

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. Details about eligibility can be found at www.GetCollegeFunds.org. Awards are renewable for 12 terms provided satisfactory academic progress and financial need continue.

The Teacher Education Assistance for College and Higher Education (TEACH) Grant Program. This grant provides up to \$4,000 per year in grants for graduate and undergraduate students who intend to teach full-time as a highly qualified teacher in high-need subject areas for at least four years at schools that serve students from low-income families. Graduate students are eligible for \$4,000 per year (\$8,000 total). Undergraduate students may receive up to \$16,000 for undergraduate study and/or up to \$8,000 for graduate study. Part-time students are eligible, but the maximum grant will be reduced.

Notice: If a student fails to complete the four-year teaching obligation, they must repay the grant with interest.

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 Direct Loan (DL). Portland State University participates in direct lending. Under this program, capital for student loans is provided by the federal government through colleges rather than by banks.

When loans are due, borrowers repay them directly to the federal government through the servicer. Borrowers are charged a loan fee of .5 percent of the principal.

Loans are available to students and parents of dependent students through the Direct Loan program. Undergraduate and post-baccalaureate students can borrow the Stafford loan; graduate students can borrow the Stafford loan and the Graduate PLUS loan; and parents of dependent students can borrow the Parent PLUS loan. Graduate students and parents will apply for the Graduate PLUS or the Parent PLUS loan on our website, www.pdx.edu/finaid.

Students will apply for the Stafford loans online at www.studentloans.gov.

Federal Direct Subsidized Stafford Loans. Subsidized loan eligibility is based upon the demonstration of financial need and in conjunction with other sources of student assistance. The federal government pays the interest on this loan while the student is in school, and enrolled at least half time. The student is responsible for interest on the loans once repayment begins.

The university determines the amount the student may borrow. The federal government has set loan limits: \$3,500 for the first academic year of undergraduate study (up to 44 credits); \$4,500 for the second academic year (45–89 credits); and \$5,500 an academic year for the remaining years of undergraduate study. Not all students are eligible for the maximums. Graduate students are not eligible for Subsidized Stafford loans.

Student borrowers must be enrolled in good standing at least half time and have been accepted for admission to a program leading to a degree or certificate. Once repayment begins, borrowers are charged a fixed interest rate of 6.8 percent.

Federal Direct Unsubsidized Stafford Loans. This program provides unsubsidized federal direct loans to students who do not qualify, in whole or in part, for the subsidized Federal Direct Stafford Loan. All Graduate level Stafford loans are Unsubsidized. Unsubsidized loans are not eligible for the federal government payment of interest while the student is in school. The student may make interest-only payments while in school, or the interest will be added to the loan balance.

The interest rate for the Federal Direct Unsubsidized Stafford Loan is fixed at 6.8 percent. The student must pay the interest that accrues during in-school, grace, and authorized deferment periods.

The federal government has set loan limits: \$2,000–\$5,500 for the first academic year of undergraduate study (up to 44 credits); \$2,000–\$6,500 for the second academic year (45–89 credits); and \$2,000–\$7,500 an academic year for the remaining years of undergraduate study. A student's financial need determines the amount of the loan offered.

Graduates may borrow up to \$20,500 a year depending on their financial need.

Generally, the cumulative amount a student can borrow from all Federal Direct Stafford Loans is as follows: \$31,000 (only 23,000 may be subsidized) as a dependent undergraduate; \$57,500 as an independent undergraduate (only \$23,000 of this amount may be subsidized); \$138,500 as a graduate or professional student (only \$65,500 of this may be subsidized).

Additional Federal Direct Unsubsidized Stafford Loans. Dependent undergraduate students whose parents are denied access to the Federal Direct Parent Loan for Undergraduate Students program may be eligible for additional Federal Direct Unsubsidized Stafford Loan money. Students with fewer than 90 credits may borrow a maximum of \$4,000 a year in additional funds above the maximum Federal Direct Stafford Loan limits. Students who have earned 90 credits or more may borrow a maximum of an additional \$5,000 a year. Not all applicants qualify for the maximums. The Federal Direct Unsubsidized Stafford Loan may be used to replace expected family contribution, but total direct loan (subsidized and unsubsidized) borrowing cannot exceed the cost of education.

Federal Direct Parent PLUS Loans (PLUS). This program provides loans to parents of dependent undergraduate students. Parents may borrow up to an annual amount that is equal to the cost of education minus any estimated financial assistance the student receives during the periods of enrollment. The borrower may use the amount of the Federal Direct PLUS to replace the expected family contribution for the loan period.

The Federal Direct PLUS is limited to parents who do not have an adverse credit history or who have obtained an endorser who does not have an adverse credit history. A direct loan program servicer, contracted by the federal government, performs the required credit check. The interest on the Federal Direct PLUS is fixed at 7.9 percent. Borrowers are charged a 4 percent fee.

Parents interested in participating in the Federal Direct PLUS program can obtain

application information from the Office of Student Financial Aid and Scholarships and on its website.

Federal PLUS Loans for Graduate and Professional Students (Graduate PLUS).

This program is offered to qualified students with or without financial need, but the student must have financial aid eligibility. Like the Direct Stafford loans for students, the U.S. Department of Education is the direct lender of the Graduate PLUS. Typically, repayment must begin within sixty days after the Graduate PLUS is disbursed. However, an in-school deferment may be obtained from the U.S. Department of Education by students that meet their requirements. Interest begins to accrue at the time the first disbursement is made at a fixed rate of 8.5 percent.

Loan Repayment. Repayment of Federal Direct Stafford Loans (subsidized and unsubsidized) begins six months after termination of at least half-time enrollment or graduation. Repayment of Federal PLUS loans begins within sixty days of the last disbursement. Borrowers have the right to prepay their loans without penalty.

Entrance and Exit Counseling. First-time Federal Direct Stafford Loan (subsidized and unsubsidized) borrowers must receive Entrance counseling. This enables students to become educated on their rights and responsibilities of borrowing loans.

Shortly before graduating from or terminating enrollment at the Portland State University, borrowers must receive exit loan counseling. The Office of Student Financial Aid and Scholarships collects information about the borrower's permanent address, references, expected employment, and driver's license number through Exit counseling. This information is forwarded to the servicer of the student's federal direct loan.

Debt Management and Default

Reduction. Portland State University is committed to helping students achieve sound financial planning and debt management. Information about loans, repayment options, and debt management strategies is available in the Office of Student Financial Aid and Scholarships. Website: www.pdx.edu/finaid/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.

Alternative Loans. Privately funded loans are not based on need, and no federal formula is applied to determine eligibility.

However, the amount borrowed cannot exceed the cost of education minus other financial aid. Interest rates and repayment terms vary, but are generally less favorable than those provided through the federal direct lending program. Private loans are used to supplement the federal programs when the cost of education minus federal aid still leaves unmet need.

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 at www.pdx.edu/careers/. For Federal Work Study information, please see the Student Employment Coordinator, in the Office of Student Financial Aid and Scholarships. www.pdx.edu/finaid/work-study.

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/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.

All students who wish to receive federal student aid funds must make satisfactory progress toward completion of their program of study. Portland State University monitors the following for all students:

- completion rate—the percentage of credits taken at PSU, or PSU plus transfer courses which have passing grades, according to the student level
- grade point average for PSU courses, or PSU plus transfer courses, according to student level
- maximum time frame (PSU courses plus accepted transfer credits). The maximum time frame for undergraduate stu-

dents is 150% of the credits required to complete the degree being sought. The maximum time frame for post-baccalaureate and graduate students is established according to the degree or certificate being sought.

Graduate students must take courses applicable to their degree or certificate. At least 67% of all credits enrolled in during each academic year must be graduate level courses.

In addition, financial aid recipients who withdraw from all classes twice within the school year are placed in Suspended eligibility status after the second total withdrawal.

Students who do not meet all requirements of the Satisfactory Academic Progress policy will have their eligibility for financial aid suspended. Students whose eligibility is suspended may submit a written appeal.

The full policy is on-line at www.pdx.edu/finaid/ under Eligibility for Aid. Printed copies can be found at the Office of Student Financial Aid and Scholarships in Neuberger Hall lobby.

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.pdx.edu/shac

The Center for Student Health and Counseling (SHAC) provides high quality, accessible medical, counseling, dental, testing, and health promotion services. All students taking five or more non-self-support credits are assessed the health fee which entitles them to access SHAC services. If a student is not enrolled for Summer Session but planning to return in the fall, they may utilize SHAC services on a fee-for service-basis.

Health Insurance: All students taking five or more non-self-support credits (1 credit for International Students) are required to have major medical insurance and are assessed an insurance fee that enrolls them in the PSU Health Insurance Plan. A student may waive out of the PSU-sponsored insurance if they maintain other insurance coverage that meets certain requirements. More information about the PSU insurance waiver process, waiver deadline, or all SHAC programs, including printable insurance claim forms and measles forms, is available at www.pdx.edu/shac.

Health Services

Health Services is staffed by physicians,

nurse practitioners, physician assistants, and nurses who are available for diagnosis, treatment, consultation, and referrals for illnesses and injuries. Women's health care is available including health exams, pap smears, family planning counseling, and contraception. Specialized men's health care and trans health care is also available. Other services include x-ray, immunizations, dispensary services, and exams and support for sexual assault survivors.

Student Health Services also provides an after-hours nurse advice line for students. That number is published on the web site. For that and other information, visit us at www.pdx.edu/shac/health.

Dental Services

SHAC Dental Services' licensed professionals provide dental care with the student's comfort and health in mind. Typical services include: comprehensive exams, teeth cleaning, periodontal screening, sealants, fillings (amalgam and white), crowns, bridges, night guards, veneers, bleaching trays, extractions, root canal therapy, and nitrous oxide. Emergency services are available to treat students with acute dental pain, swelling, or excessive bleeding.

Dental Services provides dental treatment at greatly reduced rates for PSU students. If Dental Services is unable to provide a student with care, students are returned to a community dental service or provider where they will be responsible for any fees incurred. If a student has private dental insurance, the clinic will assist them in completing insurance forms. However, the clinic is not responsible for the determination of the insurance company, nor will they be able to contact them on behalf of the student.

For further information, visit www.pdx.edu/shac/dental.

Counseling Services

Counseling Services offers a variety of services designed to support the emotional wellbeing of PSU students. Services are provided by a professional staff of licensed psychologists, social workers, psychiatrists, and doctoral and master level students in training. Services include: brief individual and group therapy, psychiatric assessment and treatment, crisis counseling, career assessment and counseling, psycho-educational workshops and trainings, and consultation. They offer comprehensive learning disability and ADHD assessments, alcohol and other drug use assessments, education, and referral. For further information, visit www.pdx.edu/shac/counseling.

Testing Services

SHAC Testing Services coordinates national tests (LSAT, Praxis, MCAT, GRE, TOEFL),

administers classroom make-up exams and accommodated testing, and administers other admissions, career, learning disability, and specialty tests. In addition, Testing Services contracts with outside companies to administer licensure exams. The service is available to PSU students and, in many instances, members of the larger community. There are fees for testing that vary depending on the test.

For more information visit <http://www.pdx.edu/testing>.

Health Promotion

Health Promotion provides health and wellness related programs and activities for PSU students. These include lectures and workshops, related screening programs, and consultation services for faculty, students, and staff. Programs are widely advertised across campus.

For further information, visit www.pdx.edu/shac/healthpromotion.

Other Student Services on Campus

Child care resources

Helen Gordon Child Development Center

1609 SW 12th Avenue
503-725-3092
www.hgcdc.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 4 months 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

1825 SW Broadway
Room 126 SMSU
503-725-2273

www.tcc.pdx.edu

The Children's Center provides childcare to students, staff and faculty on a flexible schedule. Children may register for a minimum 4 hour consecutive block of time twice a week, after you may reserve as many hours as needed per week. The Children's Center is fully licensed and staffed by professionals. The center is open Monday to Thursday 8:00a.m. to 6:00p.m. and Friday 8:00a.m. to 5:30p.m. Please call for more information and enrollment procedures.

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 intercollegiate varsity athletic programs, six for men and nine for women. Men and women compete in basketball, cross country, and indoor and outdoor track and field. The men also compete in football while the 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.

Football games will be played at the JELD-WEN Field. Erv Lind Stadium is the home venue for PSU softball and Hillsboro Stadium, (Hillsboro, OR) is the home venue for soccer. Home basketball and volleyball games are played at the Peter W. Stott Center on the campus of Portland State University.

Students who hold a valid student ID card receive free admission to all regular season home sporting events.

Student-Athlete Advising

219 Peter Stott Center, 503-725-4000

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.

Music

Many musical opportunities contribute to the cultural life of the University community. 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, Portland Jazz Orchestra, 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. Students and community members are encouraged to participate in the excellent large ensembles including the Symphony Orchestra, Concert Band, Jazz Lab Band, and Chamber Choir.

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, brass, percussion, piano, jazz, 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. Graduates have consistently demonstrated their excellence in the fields of performance, conducting, composition, and scholarship.

Many are leaders in music around the Northwest and elsewhere.

Publications

Student publications include *The Vanguard*, the daily student newspaper; *The Rearguard* and *The Spectator*, alternative student press; *The Portland Review*, the campus literary magazine; *Pathos Literary Magazine*; *KPSU Radio*; and *PSU-TV*. 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 the-

aters.

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.

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

Theater is an all too rare opportunity in our increasingly technologized and digitalized world for students to experience live community. The Department of Theatre and Film offers a myriad of opportunities for students to perform in or attend live productions.

All PSU students in any major may audition for productions in the Department of Theatre and Film whether for the mainstage shows (one is produced each term), or those directed by students for their graduate theses, directing class coursework or the new plays series in spring.

Audition listings appear regularly on the department's web page, listserv email and the callboard outside the Theatre and Film office, 127 Lincoln Hall.

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.

Undergraduate Studies

SUKHWANT JHAJ
VICE PROVOST FOR ACADEMIC INNOVATION AND STUDENT SUCCESS;
650 MARKET CENTER BUILDING
503-725-2277
www.pdx.edu/oa

Assessment

Portland State University assesses undergraduate learning through a variety of activities. The campus approved and adopted 8 Undergraduate Campus-Wide Learning Outcomes in 2010 through the Faculty Senate. Students also 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 and improve 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.

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 117 Cramer Hall or call 503-725-5890.

University Studies

117 Cramer Hall
725-5890
www.pdx.edu/unst
askunst@pdx.edu

Please see page 39 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

Freshman Inquiry

See Web or current Class Schedule 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 36 students. Each class is also 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 builds 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 the University Studies Program website (www.pdx.edu/unst) or online schedule of courses for course descriptions.

At the sophomore level, students complete 12 credits of coursework in Sophomore

Inquiry. Students select three Sophomore Inquiry classes. Sophomore Inquiry classes are structured similarly to those in Freshman Inquiry with a main class and smaller mentor inquiry workshops, except at this level the mentor classes are led by graduate students. Mentor inquiry workshops focus on weekly learning modules on study skills, writing, technology training, group dynamics, ePortfolio presentation and speech and oral communication.

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 the University Studies Program website (www.pdx.edu/unst) for descriptions of upper-division clusters and lists of approved cluster courses.

After their Sophomore Inquiry coursework, students select one of three clusters repre-

sented 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 or courses cross listed with their majors.

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.

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.

Independent volunteering, work experience, by arrangement credits, internships and practica cannot fulfill the Capstone requirement. Students must have completed 90 credit hours before registering for their Capstone course.

University Honors

Honors Program Building
1632 SW 12th
503-725-4928
www.pdx.edu/honors

Any Bachelors degree—any University major

The University Honors Program centrally engages Portland State's mission to "Let Knowledge Serve the City." The Honors Program draws on Portland State's institutional commitment to community engagement, sustainability and internationalization as well as its civic leadership and its location in downtown Portland. The program serves high-achieving, academically-motivated students by providing an engaged and challenging educational experience using the city of Portland as a living/learning laboratory.

Students have the opportunity to work closely with faculty on applied research projects, to network through internships and to take advantage of the resources of a large urban institution in the space of an intimate program. Students who participate in this unique and challenging curricular experience will graduate with University Honors in their chosen field.

The Honors Program offers a foundation course in the theory and methods of the human, natural, and social sciences, opportunities for independent study, honors colloquia and the production of a baccalaureate thesis. Honors Program classes are small, and students work closely with advisers both in the program and in the academic departments of the University to plan their work toward the degree.

The University Honors Program engages faculty from across the campus, giving students the opportunity to work with our finest teachers and researchers.

Degree Maps and Learning Outcomes

To view the degree map and expected learning outcomes for University Honor's undergraduate degree, go to www.pdx.edu/undergraduate-programs.

Eligibility and admission.

Interested students must complete a separate application to the University Honors Program available on the Honors website: www.pdx.edu/honors. All students admitted to the University Honors Program must first be admitted to Portland State University.

First-Year Students (entering from high school) minimum criteria: Writing samples and letters of recommendation are also considered for application. Student who may not meet these criteria but provide examples of outstanding achievements are also invited to apply.

- 3.50 cumulative un-weighted high school GPA
- OR
- 1820 on the SAT
- OR
- 27 on the ACT

Transfer/Current PSU Student minimum criteria:

- Transfer college cumulative 3.25 GPA
- OR
- PSU cumulative 3.25 GPA

Graduation Requirements.

All University Honors Program (UHP) students must complete a required number of honors courses (see below) and a thesis/creative project supervised and defended in front of a faculty committee. To graduate from the University Honors Program, they must have a cumulative GPA of 3.25.

UHP students entering as first-year students (30 credits or below):

	Credits
Foundations: Hon 101, 102, 103	15
Methods: Hon 201, 202, 203	12
Total lower-division	
Honors credits required	27

UHP seminars Hon 407	4-12
Thesis research and project Hon 401, 403.....	6-10
Internship.....	0-8
Departmental Honors seminars	0-8
Honors contracts.....	0-4
Honors colloquia.....	0-4
Total upper-division credits required.....	18

UHP transfer students entering with lower-division standing (31-89 credits):

	Credits
Methods: Hon 201, 202, 203	12
Total lower-division Honors credits required.....	12

UHP seminars Hon 407	4-12
Thesis research and project Hon 401, 403.....	6-10

Internship.....	0-8
Departmental Honors seminars	0-8
Honors contracts.....	0-4
Honors colloquia.....	0-4
Total upper-division credits required.....	18

UHP transfer students entering with upper-division standing (more than 90 credits):

	Credits
UHP seminars Hon 407	0-12
Thesis research and project Hon 401, 403 (or departmental prefix).....	6-10
Internship.....	0-8
Departmental Honors seminars	0-8
Honors contracts.....	0-4
Honors colloquia.....	0-4
Total upper-division credits required.....	18

Honors students are exempt from University Studies requirements.

Honors courses count towards the baccalaureate distribution requirements in the following way:

Hon 101, 102, 103 meets 8 credits in the area of arts and letters and 4 in the social science distribution area.

Hon 201 meets 4 credits in the area of the social sciences.

Hon 202 meets 4 credits in the area of arts and letters.

Hon 203 meets 4 credits in the area of the sciences.

Completing this sequence also includes 3 credits of Wr 121.

Completing this Hon 201-203 sequence would also meet the University's lower-division writing requirement.

Honors Curriculum

First year: Foundations

The Global City

Hon 101, 102, 103 (15 credits)

This year-long sequence introduces ways to think critically about the urban environment and the interdependence between the city and the global world. It begins the study of representations and perceptions of the city, the city in historical context, and the processes that shape the city's geopolitical manifestations. Class size limited to 30.

Second year: Methods

Urban Discourses

Hon 201, 202, 203 (12 credits)

Three connected courses on research methods: Urban Social Structure / Urban Culture/ Urban Ecology. These courses emphasize undergraduate research, with the city of Portland serving as archive, stage, and laboratory.

Hon 201

Students explore the concepts and systems by which cities operate through the application of primarily qualitative social science methodologies, such as ethnography and spatial/geographic analysis.

Hon 202

This course examines the urban surround, this time through the lens of the humanities, by careful examination of artifacts, texts, and cultural institutions.

Hon 203

Students explore the concepts and ecological systems by which cities operate through the application of primarily quantitative science methodologies.

Third year: Knowledge and Praxis "Let Knowledge Serve the City"**Seminars. (4-12 credits)**

Students may choose from a wide variety of interdisciplinary seminars broadly focused around key methodological and interdisciplinary questions today. Honors seminars in the student's individual majors, if offered, are required and will substitute for University Honors seminars. Class size limited to 20.

Honors colloquia (0-4 credits)

Faculty from across campus can propose Honors colloquia open to all Honors students. These 1 to 4 credit experiences should provide creative and engaging projects for students in a small alternative class. Examples of honors colloquia might include:

- attending the Portland arts and lecture series with a faculty, then participating in a discussion and then writing a critical response;
- Oregon urban/rural boundary tour: a five day ecological tour of wild spaces just at the end of Portland's urban boundary.

Internships (0-8 credits)

Internship opportunities are available Portland, Or, focused around organizations that serve multiple aspects of the urban experience, for example, OHSU, the National Institute for Health, the Smithsonian, the Portland Art Museum, the Multnomah County Library, Mercy Corps.

Fourth year: Community Engagement and Scholarship**Research and Thesis (6-10 credits)**

Students will have the opportunity to take a short thesis prospectus course through the Honors program as well as research credits in their majors as students work closely with faculty advisors in their home departments. Additionally, students will work together throughout the year of their thesis research to better understand the public dimensions of their work. Part of their end-of-year defense will be to invite community partners and other public participants to discuss the implications of their work.

Courses

Courses with an asterisk () are not offered every year.*

Ch 221H, 222H, 223H**Honors General Chemistry (4, 4, 4)**

Honors General Chemistry will address the topics of general chemistry with a focus on the urban context and the principles of green chemistry.

The course is designed to challenge well-prepared students and will utilize alternative modes of instruction in smaller class sizes. Students will work in groups to address real world problems with the guidance of the lecture instructor. The course is limited to students admitted to the University Honors Program. Students should have taken at least one year of high-school chemistry.

Ch 227H, 228H, 229H**Honors General Chemistry Laboratory (1, 1, 1)**

Laboratory work to accompany Honors General Chemistry (Ch 221H, 222H, 223H). Completion of or concurrent enrollment in lecture required. One 3-hour laboratory. Pass/no pass only.

Hon 101, 102, 103**The Global City (5, 5, 5)**

This year long sequence introduces ways to think critically about the urban environment and the interdependence between the city and the global world. It begins the study of representations and perceptions of the city, the city in historical context, and the processes that shape the city's geopolitical manifestations. Prerequisites: admission to Honors Program.

Hon 199**Special Studies (Credit to be arranged.)**

Consent of instructor.

Hon 201**Urban Social Systems:****Methods in the Social Sciences (4)**

In tandem with HON 202 and 203, this course emphasizes undergraduate research, with the city of Portland serving as archive, stage, and laboratory. Students explore the concepts and systems by which cities operate through the application of primarily qualitative social science methodologies, such as ethnography and spatial/geographic analysis. Prerequisites: admission to Honors Program.

Hon 202**Reading Urban Cultural Systems:****Methods in the Humanities (4)**

In tandem with HON 201 and 203 this course examines the urban surround, this time through the lens of the humanities, by careful examination of artifacts, texts, and cultural institutions. Prerequisites: admission to Honors Program.

Hon 203**Urban Ecological Systems:****Methods in the Sciences (4)**

In tandem with HON 201 and 202, this course emphasizes undergraduate research, with the city of Portland serving as archive, stage, and laboratory. Students explore the concepts and ecological systems by which cities operate through the application of primarily quantitative science methodologies. Prerequisites: admission to Honors Program.

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.

Military Science

2121 SW 4th Ave., Unitus Building
503-725-3512

<http://www.armygold.pdx.edu>

The department of military science entails the study of techniques, psychology, and practice used with the training of officers and soldiers. Military Science encompasses six major branches as follows:

Military Organizations – Develops optimal methods for the administration and organization of military units, as well as the military as a whole.

Military Education and Training – Studies the methodology and practices involved in training soldiers, NCOs (non-commissioned officers, i.e. sergeants), and officers.

Military History – Military activity has been a constant process over thousands of years, and the essential tactics, strategy, and goals of military operations have been unchanging throughout history.

Military Geography – Military geography encompasses much more than protestation to take the high ground, it studies the obvious, the geography of theatres, also the additional characteristics of politics, economics, and other natural features of locations.

Military Technology and Equipment – Military technology is not just the study of various technologies and applicable physical sciences used to increase military power. It may also extend to the study of production methods of military equipment, and ways to improve performance and reduce material and/or technological requirements for its production.

Military Strategy and Doctrine – Military strategy is in many ways the centerpiece of military science. It studies the specifics of combat, and attempts to reduce the many factors to a set of principles that govern all interactions of the field of battle. Portland State University and the Oregon Army National Guard offer a unique leadership development program specifically for the civilian career-minded student. This program, Guard Officer Leadership

Development or GOLD/ROTC provides motivated young men and women with exciting and valuable instruction in a variety of areas such as decision-making, goal-setting, team-building, and small-group leadership. Classroom and outdoor activities are designed to physically, mentally, and emotionally challenge you, build your self-confidence, and develop your leadership skills. If you qualify, you could earn a commission as an Army officer upon graduation in the Oregon Army National Guard.

Program

GOLD/ROTC is a four-year program that provides on-campus military science instruction in two parts: the Basic Course and the Advanced Course. For this training, you are paid as a Sergeant (E-5). Both Courses are fully accredited and applicable towards ful-

filling academic requirements for a baccalaureate degree.

Basic Course. The Basic Course is comprised of 100 and 200-level lower division courses, is usually taken in your freshman and sophomore years, and is open to any student enrolled at PSU. Your participation in this course is completely voluntary and requires no military commitment. Instruction is oriented on adventurous outdoor activities that give you insight into the military service, basic soldiering, and leadership.

You also get to learn about the citizen-soldier and his or her social contributions, duties, and responsibilities. Through your personal involvement, you get to see whether this role appeals to you.

Advanced Course. The Advanced Course is a two-year pre-commissioning phase that integrates classroom instruction, military

training, and practical experience to progressively develop your leader skills, qualities, and character. Further leadership development will occur in 300/400 level Military Science and Army Physical Fitness classes. We will continuously assess your performance and provide you the essential feedback and reinforcement you need to become a leader in business, the community, and the Army National Guard.

Eligibility For The Basic Course. This course is open to any student enrolled at PSU.

Eligibility For The Advanced Course. You must meet these requirements to be accepted into the Advanced Course:

- Be between 18 and 30 years old. Age waiver may be granted up to age 35 by the Adjutant General or Commanding General of the State or Territory you reside in. (NGB-ARH Memo #06-11)
- Be a U.S. citizen.



- Be a member of the Army National Guard, Army Reserves or completed MS 100/200 level classes or attended LTC (Leadership Training Course) during the summer of your sophomore year.
- Be in good health as evidenced by a current Chapter II or DODMERB physical.
- Be of good moral character and behavior.
- If you are currently in the Army National Guard or Reserves you do not have to participate in the Basic Course to enter the Advanced Course, but it is encouraged.

Courses

Basic Courses (Freshman - MS I)

MS 111

Basic Leadership Skills Credits: (1)

Teaches basic leadership skills based on military training doctrine. Students will be introduced to the BE-KNOW-DO method of leadership and learn how to apply it to small group leadership situations.

MS 112

Roles of the Army (1)

A study of the Total Army, its' concept and role in society. Examines missions, organization, personnel, and history of the Regular Army, National Guard, and Reserves.

MS 113

Adventure Training (1)

The examination and practical application of Basic Rifle Marksmanship, rappelling, mountain climbing, and basic first aid. An optional once a month field trip is offered for more extensive experience.

MS 121

Leadership Lab (0)

Provides practical experience in selected military skills and drill and ceremonies. Permits the exercise and evaluation of leadership skills in a controlled situation. Taken in conjunction with MS classes.

MS 131

Army Physical Fitness Training (1)

The course is designed to introduce students to the basics of physical fitness training as designed by the Army. It is instructed by an Army Master Physical Fitness Instructor. Participants will train to pass (score of 180 or above) the Army Physical Fitness Test, which is a combination of push-ups, sit-ups, and a 2-mile run.

Basic Courses (Sophomore - MS II)

MS 211

Land Navigation (2)

Teaches basic topographic map reading skills and land navigation using a lensatic compass and terrain association. Includes practical exercises.

MS 212

Leadership and Management (2)

Introduction to fundamental leadership and management including problem analysis, decision-making, planning, management control, and interpersonal skills. Topics such as professional ethics, team development, and oral communication skills.

MS 213

Basic Military Skills (2)

The course teaches basic military skills in first aid, wireless communications, land navigation, weapons systems, and small group leadership techniques.

Advanced Courses (Junior - MS III)

MS 309

Introduction to American Military History (3)

The course covers the American Army's history from its birth in 1775 to the eve of World War I.

MS 310

American Military History (3)

The course builds on the introduction to American Military History covering World War I to the Global War on Terror. Expected preparation: MS 309

MS 311

Military Leadership (3)

This course studies Army Command and Control along with small unit leadership fundamentals. The Junior Officer's role and responsibilities in the leadership process are fully examined.

MS 312

Military Operations (3)

The course studies the principles of war and the employment of military forces in accordance with US Army doctrine, organization, equipment, and training.

MS 313

Small Unit Tactics (3)

The course studies the fundamentals, techniques, and procedures of a light infantry squad and platoon tactics. Develops leadership skills in planning, organizing, and conducting small unit operations.

Advanced Courses (Senior - MS IV)

MS 409

Practical Field Experiences (1-6)

This course covers the summer practical experiences at either at the Leadership Training Course (LTC) or Leadership Development and Assessment Course (LDAC).

MS 411

Army Training Management (3)

The course studies both the Army's training philosophy and its training system. The class focuses on the Junior Officer's role and responsibilities in the process of battle planning, establishment of unit training programs, and execution of military instruction.

MS 412

Military Law & Administration (3)

The course focuses on Military Justice, Army Personnel Management, and Army Logistics and Supply. Students study the Junior Officer's role and responsibilities in military law enforcement, officer and enlisted personnel management, resource management, and service support.

MS 413

Personal Affairs and Career Development (3)

An in-depth examination of the Second Lieutenant on the Total Army and preparation for officer commissioning in the Army National Guard. This course will help to provide students with the critical information on various topics. These topics include, but are not limited to, officer specialty selection, unit assignment, promotion and mobilization, career planning, and professional development.

Graduate Studies

MARGARET EVERETT
ASSOCIATE VICE PROVOST AND DEAN OF GRADUATE STUDIES
184 XSB (1633 SW PARK AVE.), 503-725-8410
WWW.PDX.EDU/OGS

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, personal intellectual enrichment, and professional development. More than 5,000 graduate students are enrolled in the University's colleges and schools, and over 1,900 graduate degrees are awarded annually in the more than 70 master's and the 18 doctoral programs.

The Office of Graduate Studies (OGS) oversees the University's graduate programs in the interest of ensuring quality instruction and research and promoting the highest achievement of graduate students. 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 Graduate Council develops and recommends University policies and regulations for graduate studies, recommends standards for graduate courses and programs, and adjudicates petitions regarding graduate policies. The Dean of Graduate Studies is responsible for conducting the affairs of the Office of Graduate Studies and for certifying 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 pursued. 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 petition process is an option in unusual cases with extenuating circumstances. A petition is not a remedy for poor advising on the part of an academic unit or poor planning by the student. The responsibility of initiating the petition rests with the student. Petition forms are available from the Office of Graduate Studies and on the OGS web site. The decision of the Graduate Council is final.

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. Complete application materials are available from the individual academic departments. The University application, as well as some departmental applications, are also available in online format. Incomplete applications submitted 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 503-725-3511 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 to the Office of Admissions. 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 University application form and the non-refundable application fee are valid for one calendar year. To validate admission, a student must register and pay for at least one credit at PSU 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 an unopened envelope sealed at the originating institution 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 Admissions in Neuberger Hall at 503-725-3511.

3. A minimum score 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 scores are 550 for the Paper-based test or 80 for the Internet-based test with subscores of at least 18 in reading and writing. Two other tests may be substituted for the TOEFL: the International English Language Testing System exam (IELTS), with a minimum overall band score of 6.5 and minimum bands of 6.5 in reading and writing; or the Pearson Test of English-Academic, with a minimum score of 60. 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 in Australia, English-speaking Canada, Ireland, New Zealand, or the United Kingdom 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.

The Three-Year Bridge Program is an alternate method of meeting graduate admission requirements. It is designed for international students coming from non-Bologna-compliant three-year baccalaureate degree programs recognized by the Ministries of Education in their home countries. This program comprises approximately one year of academic study intended to bridge the differences between the applicant's degree and a four-year U.S. baccalaureate degree. Students are invited to participate in this program only if they have been recommended for admission by their departments.

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

University requirements for admission to graduate certificates or degrees. 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, having achieved a minimal accepted GPA, and recommendation from the appropriate department. 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 institution in Australia, English-speaking Canada, Ireland, New Zealand, or the United Kingdom must pass the Test of English as a Foreign Language (TOEFL); the International English Language Testing System exam (IELTS) or the Pearson Test of English-Academic may be substituted for the TOEFL.

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.

Three-Year Bridge Program. This program is an alternate method of meeting graduate admission requirements. It is designed for international students coming from non-Bologna-compliant three-year baccalaureate degree programs recognized by the Ministries of Education in their home countries. This program comprises approximately one year of academic study intended to bridge the differences between the applicant's degree and a four-year U.S. baccalaureate degree. Students are invited to participate in

this program only if they have been recommended for admission by their departments.

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 can only be obtained directly from the specific department. Admission is selective and meeting minimum requirements does not guarantee admission. The number of students admitted to a particular program is limited to the resources available.

Admission Statuses

All admitted graduate certificate and degree students will be assigned one of the following admission statuses:

Regular status. Students who meet the University requirements and are recommended for admission by their departments as potential degree candidates are given Regular status. To be considered for admission with Regular status, the applicant must have a cumulative undergraduate GPA of 2.75 or higher. Applicants who have already earned 9 or more letter-graded graduate credits must have a cumulative graduate GPA of 3.00 or higher; this GPA supersedes the undergraduate GPA. A student who has Regular status is eligible to be a graduate assistant.

University Conditional status. Students who do not meet GPA requirements for Regular status are given University Conditional status if they are recommended for admission by their departments and have a cumulative undergraduate GPA between 2.50 and 2.74. After completing 9 letter-graded graduate credits with a GPA of 3.00 or higher, students with University Conditional status will automatically be given Regular status. Students admitted on University Conditional status who do not achieve a GPA of 3.00 or higher after completing 9 letter-graded graduate credits will have their admission canceled. A student who has University Conditional status is not eligible to be a graduate assistant.

Department Conditional status. Department Conditional status may be imposed on a student who has a deficiency in departmental requirements. These conditions may include GPA requirements or additional coursework and may be more rigorous than University Conditional status or other University standards. Department Conditional status can only be removed by the department with a request to the Office of Graduate Studies. Students who do not fulfill the requirements of their Department Conditional status can have their admission

canceled by the department. A student who has Departmental Conditional status is eligible to be a graduate assistant.

Both University Conditional and Department Conditional status. Students who have both University Conditional status and Department Conditional status are subject to all of the policies stated above. University Conditional status and Department Conditional status are converted to Regular status independent of each other, and usually not at the same time. A student who has both University Conditional status and Department Conditional status is not eligible to be a graduate assistant.

Other Admission Categories

Certificate. All students working in a planned program leading only to a postbaccalaureate (not graduate) certificate are given certificate admission. Certificate students may be admitted to other categories of graduate study and concurrently pursue a postbaccalaureate certificate.

Postbaccalaureate. Students not currently working toward a degree but who wish to register for more than 8 graduate credits may be admitted to postbaccalaureate status. A postbaccalaureate student may find departmental enrollment limitations on many courses.

A postbaccalaureate student wishing to be admitted to a graduate certificate or degree program must apply in the same way as any other applicant, meet the general University requirements, and be recommended for admission by the department. 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. (See section on pre-admission and transfer credit, page 61.)

Departmental Request for Special Admission. In cases when a student does not meet minimum University admission requirements, departments may choose to submit a Graduate Admission – Special Approval Request (GO-20 form). This process may only be initiated by a department (not a student).

Enrollment

Validation of Admission. Students must register for a minimum of 1 credit during their term of admission; failure to do so will result in cancellation of admission.

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 basis for grade
M—Missing grade
AU—Audit

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.

To remove an Incomplete, the instructor must submit a grade change to Registration and Records within one year (e.g., by the end of fall 2013 for a course registered for fall 2012).

An Incomplete grade becomes part of the permanent transcript record after the one-year deadline expires, unless a waiver is approved by petition to the Graduate Council.

Non-attendance. It is the student’s responsibility to drop courses they do not wish to attend. 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.

Withdrawals. Withdrawal from a course must be initiated by the student. It is the student's responsibility to withdraw properly by the published deadlines dates.

A student may withdraw with no record on the transcript up to the end of the second week of the term. As a courtesy, students are advised to notify the instructor concerned of the intended or completed withdrawal.

A student who withdraws after the second week will have a W recorded on the transcript. A student may withdraw for any reason during the third or fourth week, but withdrawing between the fifth and seventh weeks requires instructor approval.

A student wishing to withdraw after the seventh week must petition the Deadline Appeals Board. A W is recorded if the petition is approved. Reasons for withdrawal beyond the seventh 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.

The above deadlines refer to Fall, Winter and Spring terms. For deadlines during Summer Session, consult the Summer Session website at <http://www.pdx.edu/summer/>

No Basis for Grade. An X grade indicates No Basis for Grade and is used when there is little or no attendance and there is no work/performance upon which to base an academic evaluation. X grades cannot be changed after initial submission, and other grades cannot be changed to an X.

An auditor may also be assigned an X for insufficient attendance.

Non-Completion of Course. 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 the appropriate grade based on coursework completed.

Missing Grade. If an instructor does not award a grade during the open grading window, an M grade (Missing) is automatically assigned. Effective Fall 2011, M grades will change to a grade of X one term after the M was initially assigned. Once converted to an X, the grade cannot be changed.

A student will not be certified for graduation who has any M grades in PSU graduate courses that could potentially be 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 with the sole intent of raising the GPA is not acceptable.

If a course offered as a 400/500 level course is taken at the 400 level, the same course cannot be taken again for credit at the 500 level.

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. Audited courses cannot be used to meet any requirement for degrees or certificates, for required registration for graduate assistants, or for scholarship students. Students cannot receive financial aid for audited courses.

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.

Catalog Eligibility. To earn a graduate degree, students must meet the degree requirements published in a single, valid PSU Bulletin (catalog). The requirements in a catalog are valid for seven years; for example, the 2013-14 Bulletin can be used through summer 2020 graduation. Students can only use a catalog year during which they were both admitted and enrolled. (At the time a graduate program has a change to their curriculum approved, they may set more restrictive limits about which set of requirements can be used.)

Academic Record Sealed After Degree Earned. Portland State University academic records are sealed thirty days after the conferral of a degree. After this date, no changes can be made to the academic record, such as removal of Incompletes or grade changes.

Correspondence credit. Under no circumstance will graduate credit earned through correspondence study be acceptable toward an advanced degree.

Academic load. Full-time enrollment for graduate students is 9-16 credits. 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 and OGS. A graduate assistant registering for more than 16 credits must obtain approval from the department chair and

OGS. 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 every term, including those working on any aspects of research, project, 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 project, thesis or dissertation until its final approval 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.

Residency requirements. Residence credit is defined as credit taken at PSU after formal admission to a graduate degree program. Residency requirements are intended to ensure that students work in close association with other graduate scholars in the intellectual environment of PSU.

In a master's program, to meet the residency requirement a student must earn a minimum of two-thirds of the credits applied to the degree after formal admission to a master's degree program at PSU.

In a doctoral program, to meet the residency requirement a student must register for and satisfactorily complete a minimum of three consecutive terms in full-time residence (minimum 9 graduate credits applicable to the degree program each term) after admission to the doctoral program at PSU.

Credit distribution and limitations. Courses applied to any graduate certificate or degree program must be at the 500 or 600 level. Courses at the 700 and 800 level are not acceptable in any graduate certificate or degree programs, with the exception of 800-level courses in the master's degree programs in the Graduate 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.

Students who take 400/500 courses at the 500 level must complete additional work beyond the requirements for the 400-level section. With the exception of coursework reserved for graduate credit (see below), graduate tuition is charged for all graduate-level coursework.

At the master's level, a minimum of 12 credits in a 45-credit program 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 at the 500 level.

Limitations are placed on the number of 501, 502, 503, 504, 505, 508, and 509 credits that can be applied to master's degrees. 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.

Joint Campus courses. Graduate students at PSU may take graduate courses at other institutions in the Oregon University System and register for these courses through the PSU Office of Registration and Records. These courses are recorded on the student's PSU transcript as joint campus courses (JC 510/610). To register for joint campus courses, students must have approval from their adviser, department, and PSU, as well as approval from the course instructor at the OUS institution at which the course is being offered. The student must be a matriculated graduate student in a PSU graduate certificate or degree program and be registered for PSU credit during the same term the JC 510/610 course is taken. Joint campus courses are considered transfer credits for which all transfer credit limitations apply (see below). Forms for joint campus courses 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. For all graduate certificate and degree programs, pre-admission and transfer credits must be graduate credit taken at a regionally accredited institution and applicable to a graduate degree program without qualification at the originating institution. Pre-admission and transfer credits cannot be correspondence credit.

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. Pre-admission and transfer credits for master's degrees must meet all the following requirements: must be letter-graded B- or higher (pass or similar grading methods are not acceptable); must not be used for any other degree at any institution; must be no older than seven years old at the time the master's degree is awarded; and must total no more than one third of the required credits for a master's

degree program. For master's degrees, pre-admission credits taken at PSU are approved via a request from the department to OGS. This request should be made soon after admission to the graduate program. Transfer courses from another regionally accredited institution are requested via the Proposed Transfer Credit form (GO-21M) submitted to OGS. It is strongly suggested that this form be submitted early in the student's program. (The M.S.W. program has specific transfer credit allowances resulting from accreditation requirements and inter-institutional agreements, but a minimum of 42 credits applied to the M.S.W. must be taken at PSU.)

For graduate certificates, two-thirds of the required credits, or 15 credits, whichever is higher, must be taken at PSU. Individual programs may set higher minimums. Transfer credits for graduate certificates must be letter-graded B- or higher (pass or similar grading methods are not acceptable) and must be no older than seven years old at the time the graduate certificate is awarded. Transfer credits from other institutions must be approved by the graduate certificate program and the Office of Graduate Studies using a GO-11GC form. Although pre-admission limits do not apply, reserved credit limits do apply (see below). Students are encouraged to apply for and be admitted to graduate certificate programs as early as possible.

For doctoral degrees, pre-admission and transfer limits are at the discretion of the individual doctoral programs. Pre-admission and transfer courses approved for use by the doctoral program are added to the student's doctoral program of study.

Approved graduate transfer courses from other institutions are not entered on PSU transcripts and are not considered in the computation of PSU cumulative graduate GPA. However, transfer courses are included in the approved program of study for all graduate certificate and degree programs and are used to calculate the program GPA, which must be 3.0 or higher in order to graduate.

Pre-admission and transfer credits from foreign institutions are subject to the same requirements and limitations. Requests for foreign pre-admission and transfer credits must include additional documentation to facilitate verification of eligibility; contact the Office of Graduate Studies for details.

Reservation of coursework for graduate credit. Graduate-level course work taken while working toward a student's first bachelor's degree can be reserved for use in a PSU graduate program. Only credits earned at PSU can be reserved for graduate credit. Reserved graduate credit is limited to 12 completed graduate credits letter-graded B-

or higher earned within the last 45 credits prior to awarding of the student's first bachelor's degree and not used to fulfill the requirements for any bachelor's degree. Such courses are pre-admission credits and subject to all pre-admission requirements and limitations. Departments may have stricter limitations.

Use of reserved credits is approved via a request from the department to OGS. This request should be made soon after admission to the graduate program.

Course Overlap between Degrees and Certificates. In specific circumstances, coursework only (not a project, thesis/dissertation, or other culminating activity) can be shared between programs. There are limits on the use of eligible graduate courses between graduate programs.

- A graduate course that has been used to meet the requirements for a bachelor's degree or any undergraduate program cannot be applied to any graduate program (degree or certificate) unless the courses are part of a bachelors+masters program approved by the University, and the student has been admitted to that program. (see below).
- Graduate courses can be applied to two master's degrees only under the Dual Degree option (see below).
- Graduate courses can be applied to a master's degree and a doctoral degree provided the master's degree is awarded prior to or concurrent with the doctoral degree.
- Graduate courses can be applied to a master's degree and a graduate certificate.
- Graduate courses can be applied to a doctoral degree and a graduate certificate.
- Graduate courses cannot be applied to two graduate certificates.
- Graduate courses can be applied to more than one doctoral program (at the discretion of both doctoral programs), but the following items must be completed at Portland State for each doctoral degree: comprehensive exams, residency, proposal, advancement to candidacy, and dissertation research.

Bachelors+masters program.

Bachelors+masters degree programs allow high-achieving students to complete a bachelor's and master's degree at an accelerated pace. Students with upper-division standing may apply to an approved bachelors+masters degree program. The minimum cumulative undergraduate GPA for admission to a bachelors+masters program cannot be less than 3.3 (including transfer credits); beyond the GPA minimum, individual programs will set their own admissions criteria. Students admitted to an approved bachelors+masters program can share a max-

imum of 15 graduate credits between a bachelor's and master's degree. Programs may choose to allow fewer shared credits. Shared credits will be considered pre-admission credits when applied to the master's degree.

After admission to a bachelors+masters degree program, students must maintain a cumulative undergraduate GPA of 3.3 and earn a B or higher in graduate courses taken for shared credit. Upon completion of the bachelor's degree, students who meet those requirements will be guaranteed admission to the master's program with shared credits. Students who do not meet those requirements would need to apply for admission to the master's degree program without the benefits of bachelors+masters shared coursework.

Dual master's degrees. A graduate student may work concurrently toward the completion of the requirements for two PSU master's degrees in complementary disciplines. Dual master's degrees allow for an overlap of the credits required for two master's degrees. The credits to be accepted for both degrees must be approved by the departments involved and may not exceed one-third of the required credits for a degree. If the two master's programs have different total credit requirements, the one-third limit is determined by the smaller total credit requirement.

Students working toward dual master's degrees must be admitted to the second degree program no later than the term prior to the term in which the student graduates from the first degree program. Overlapping credits used in dual master's degrees must be approved by the student's departments and the Office of Graduate Studies with a GO-14 (Dual Degree Form) before the student graduates from the first master's degree program. Students are limited to one use of the dual master's degree allowance at PSU.

Leave of absence. A student admitted to a graduate program and in good standing may petition for leave of absence for up to 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 director, must be filed in the Office of Graduate Studies not later than the Friday of the second week of the term for which the leave of absence should take effect. A leave of absence will not be approved retroactively. A leave of absence is granted only to graduate students in good academic 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 as well as the Office of Graduate Studies. Students who have not enrolled for three terms (excluding summer) must submit a re-enrollment request.

Re-enrollment. Admitted graduate students who fail to enroll for credits for three consecutive terms (excluding summer) must submit a Graduate Re-Enrollment Request to their department; if this request is supported by their department, the request is signed and forwarded to the Office of Graduate Studies 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.

Students submitting the Graduate Re-Enrollment Request who have enrolled in coursework elsewhere since PSU admission must also submit one sealed, official transcript to the Office of Admissions from each institution attended subsequent to PSU graduate admission.

To ensure timely registration, the completed Graduate Re-Enrollment Request should be received by the Office of Graduate Studies no later than three weeks prior to registration.

Per Executive Order 13607, students who are re-enrolling after an interruption due to military service can re-enroll in the same program, with the same enrollment status and the same academic standing, which they had when the military service began if they wish. The period of military service and an additional period of up to three years (limited to five years total), may be excluded from standard University time limits. Students must notify OGS that they are returning from military services (and present appropriate documentation) so that the possible impact on time limits can be identified.

Cancellation of admission to graduate program. If a student does not validate admission by registering and paying for at least one credit at PSU 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 a one-year period. If the student does not validate admission within a one-year period, 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 certificate or degree 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

OR does not make satisfactory progress toward the degree (as determined by the department) may have admission to the degree program canceled. Additionally, a doctoral student who has not been registered for three years will have admission to the degree program canceled. For further information, students are urged to contact individual departments for departmental policies and practices.

Academic Standing

All admitted graduate certificate and degree students at Portland State University must maintain good academic standing during the course of their graduate program at PSU. Good academic standing is defined as maintaining a cumulative graduate GPA of 3.00 or higher in all graduate credits earned at PSU. 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 graduate student is placed on probation if the student's cumulative graduate GPA at PSU, based on the completion of 9 or more letter-graded graduate credits after admission to the graduate level at PSU, falls below 3.00.

While on academic probation a student will not be permitted to graduate, to be admitted to a new or different graduate certificate or degree program, to be advanced to doctoral candidacy, to have a thesis or dissertation committee appointed, to receive or continue to hold a graduate assistantship, or to register for more than a total of 9 credit hours in any term. A student is removed from academic probation if the student's cumulative graduate GPA is brought up to 3.00 or higher within the next 9 letter-graded graduate credits after beginning probation status.

Academic Disqualification. Disqualification occurs if:

1. A student on academic probation fails to achieve a cumulative graduate GPA of 3.00 or higher within the next 9 letter-graded graduate credits after beginning probation status; or
2. A student becomes subject to academic probation for a second time.

A student who is disqualified may not register for any graduate courses at PSU.

Readmission after disqualification.

Readmission after disqualification is not automatic. A disqualified student may petition for readmission as a student in a graduate certificate or degree 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. Such a petition would

need to address the circumstances that led to disqualification and provide evidence of preparedness to resume graduate study.

If a student's graduate program recommends readmission, the Graduate Council may grant readmission, with or without additional academic requirements, or may recommend continued disqualification. A readmitted student must raise the cumulative graduate GPA to 3.00 or higher within the first 12 letter-graded credits after readmission, or the student will be disqualified.

Graduate courses completed at other institutions 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.

Tuition, fees, and aid

Basic Graduate Fees

The basic fees associated with graduate study at PSU are listed at www.pdx.edu. The admission application fee is required and is nonrefundable. All newly admitted graduate students are assessed a one-time graduate matriculation fee in their initial term of admission. The graduate tuition fees depend on the total number of credits in enrolled classes, differential tuition, and resident or nonresident status in the state of Oregon. Further details on graduate fees are available by contacting the Office of Registration and Records in Neuberger Hall.

Financial Assistance

Graduate assistantships. The University offers graduate assistantships for teaching, research, and administrative support on a competitive basis for students working toward graduate degrees at PSU. To qualify and to remain eligible for an appointment, a student must be admitted with Regular or Department Conditional status and be in good academic standing in a graduate degree program at PSU. (Students admitted only to a graduate certificate program are not eligible for a graduate assistantship.) Graduate assistants must be registered for and satisfactorily complete a minimum of 9 graduate academic credits applicable to the degree 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 Office of Graduate Studies.

Graduate assistants who do not meet continuation requirements (i.e. satisfactory completion of a minimum of 9 graduate academic credits applicable to the degree, with term and cumulative GPAs of 3.00 or higher) will have their assistantship canceled by the Office of Graduate Studies. Satisfactory completion of a graduate course is defined as a letter grade of B- or higher, P, or IP. Grades of C+ and below, NP, I, X, W, and M are not successful completion of a graduate course. Audits (AU) cannot be

used to meet the 9-credit requirement.

Graduate assistants who do not satisfactorily complete 9 graduate credits in a term, but who 1) have a term GPA below 3.0 and have no grade below a B- and are not on academic probation, 2) have 4 credits or fewer of grades in the C range (C+, C, C-) and have a term GPA of 3.0 or above, or 3) have 4 credits or fewer of Incomplete and have a term GPA of 3.0 or above, qualify for Warning Status. The graduate assistant's employing unit must request Warning Status. If Warning Status is granted, the student may continue as a graduate assistant despite not satisfactorily completing 9 graduate credits in a term. However, if the student fails to meet the requirement of satisfactorily completing 9 graduate credits in a term for a second time, the assistantship will be terminated and the student will not be allowed to serve as a graduate assistant in the future.

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 wishing to apply for graduate assistantships must correspond directly with the appropriate department offering the assistantship.

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 both full-time and part-time graduate students. The PSU Laurels is a merit program; financial need is also a consideration for some of the awards. Information is available from the Office of Graduate Studies.

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 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 and Scholarships 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, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, South Dakota, 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 affairs and policy. Applications for the WICHE program are available through the Office of Graduate Studies.

Graduate programs

The graduate 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.

To be admitted to a graduate certificate program, students must meet all departmental and University admission requirements (see page 58). For further information on admission, as well as other aspects of a specific graduate certificate program, the appropriate department should be contacted directly.

Graduate certificate students must remain in good academic standing (see page 62) and must achieve a cumulative GPA of 3.00 or higher in all courses to be used for the graduate certificate.

There are limits on the use of 510/610 courses in graduate certificates. A maximum of one 510/610 course is allowed per student, per program, and a 510/610 course can only be used as a substitute for an elective, not a core course.

Although grades of C+, C, and C- are below the graduate standard, they may be counted as credit toward a graduate certificate with the specific written approval of the

program. Grades of D or F indicate clearly unacceptable work and carry no graduate credit. 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 (e.g., a course started in the fall term of 2006 will be beyond the seven-year limitation at the close of fall term 2013).

A student cannot graduate with a graduate certificate who has an M (Missing) grade in a PSU graduate course that could potentially be letter graded, even if the course is not applied to the program of study.

For graduate certificates only, transfer credit is defined as any eligible letter-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. See the section on Course Overlap between Degrees and Certificates (see page 61) for use of coursework in certificate programs.

The following graduate certificate programs are currently offered: Applied Statistics; Computational Intelligence; Computer Modeling and Simulation; Earth and Space Sciences for K-12 Educators; Engineering Geology; Environmental and Resource Economics; Environmental Geology; Geographic Information Systems; Hydro-Geology; Mathematics for Middle School Mathematics Teachers (College of Liberal Arts and Sciences); Addictions Counseling; Children's and Young Adult Literature; Infant/Toddler Mental Health; Marriage, Couples, and Family Counseling; Service-Learning and Community-Based Learning in Postsecondary Education; Student Affairs in Higher Education; Teaching Adult Learners (Graduate School of Education); Gerontology; Nonprofit and Public Management; Real Estate Development (College of Urban and Public Affairs); Analog and Microwave Circuit Design; Communication Systems; Computer Architecture and Design; Computer Security; Design Automation; Digital Design; Digital Signal Processing; Energy Systems; Image Processing; Integrated Circuit Test, Verification, and Validation; Lasers and Optoelectronics; New Product Development Management; Software Engineering; Strategic Management of Technology; Systems Engineering Fundamentals; Technological Entrepreneurship; Technology Management (Maseeh College of Engineering and Computer Science); Food Marketing and

Logistics (School of Business Administration); Sustainability (Interdisciplinary Studies); Hydrology (College of Liberal Arts and Sciences and Maseeh College of Engineering and Computer Science); Transportation (College of Urban and Public Affairs and Maseeh College of Engineering and Computer Science); and Urban Design (College of Urban and Public Affairs and College of the Arts).

Application materials and program requirements are available from the departments offering these programs.

MASTER OF ARTS AND MASTER OF SCIENCE (M.A. AND M.S.)

The University offers programs leading to the Master of Arts and the Master of Science. These 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 a second language. Second language proficiency is not required for the Master of Science degree.

To be admitted to a M.A. or M.S. degree, students must meet all departmental and University admission requirements (see page 58). For further information on admission, as well as other aspects of a specific degree program, the appropriate department should be contacted directly.

The following M.A. and M.S. degrees are currently offered: Anthropology; 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 Leadership and Policy; Media/Librarianship; Special Education); Electrical and Computer Engineering (M.S. only); Engineering and Technology Management (M.S. only); Environmental Science and Management (M.S. only); English (M.A. only); Financial Analysis (M.S. only); World 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; History (M.A. only); Interdisciplinary Studies; Mathematics; Materials Science and Engineering; Mechanical Engineering; Music; Physics; Political Science; Psychology; Sociology; Speech and Hearing Sciences; Statistics; Systems Science (M.S. only); TESOL (M.A. only); Theater Arts; Writing.

MASTER OF ARTS IN TEACHING AND MASTER OF SCIENCE IN TEACHING (M.A.T. AND M.S.T.)

The Master of Arts in Teaching and Master of Science in Teaching degrees are designed to combine coursework in the major discipline with coursework in education. To this end, the programs are developed and administered within flexible guidelines to match the needs of students with varying backgrounds and professional plans. All M.A.T. degrees require a demonstrated proficiency in a second language. Second language proficiency is not required for the M.S.T. degree.

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 math.

To be admitted to a M.A.T. or M.S.T. degree, students must meet all departmental and University admission requirements (see page 58). For further information on admission, as well as other aspects of a specific degree program, the appropriate department should be contacted directly.

The following M.A.T. and M.S.T. degrees are currently offered: General Arts and Letters; Environmental Science; World Languages (French, German, Japanese, and Spanish); Science; General Social Science; and Mathematics.

PROFESSIONAL DEGREES

PSU offers a variety of degrees which are designed to prepare students for work in professional fields. The programs are designed to develop a mastery of the subject matter in a chosen discipline and to provide practical training and experience in the field.

To be admitted to a professional degree program, students must meet all departmental and University admission requirements (see page 58). For further information on admission, as well as other aspects of a specific degree program, the appropriate department should be contacted directly.

The following professional degrees are currently offered: Master of Architecture (M.

Arch.); Master of Business Administration (M.B.A.), in Health Care Management and Business Administration 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, 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 Contemporary Art Practices and Creative Writing; Master of International Management (M.I.M.); Master of Music (M.M.), with options in Performance, Conducting, and Jazz Studies; Master of Public Administration (M.P.A.), with an option in Health Administration; Executive Master of Public Administration (M.P.A.E.); Master of Public Health (M.P.H.), a joint program with Oregon Health Sciences University and Oregon State University, with options in Health Promotion and Health Management and Policy; Master of Real Estate Development (MRED), Master of Software Engineering (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.)

The Doctor of Philosophy degree is awarded for scholastic achievement based upon the candidate's proven comprehensive knowledge in a 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.

To be admitted to a Ph.D. program, students must meet all departmental and University admission requirements (see page 58). For further information on admission, as well as other aspects of a specific degree program, the appropriate department should be contacted directly.

The following Ph.D. degrees are currently offered: Applied Physics; Applied Psychology; Biology; Chemistry; Civil and Environmental Engineering; Computer Science; Earth, Environment and Society; Electrical and Computer Engineering; Mathematics Education; Mathematical Sciences; Mechanical Engineering; Public Affairs and Policy; Social Work and Social Research; Sociology and Social Inequality; Systems Science (with options in Anthropology, Business Administration, Civil Engineering, Economics, Engineering Management, Mathematics, Mechanical Engineering, Psychology, and Sociology); Technology Management; and Urban Studies.

DOCTOR OF EDUCATION (ED.D)

The Doctor of Education degree is granted in recognition of mastery of theory, practice, and research in education. 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.

To be admitted to the Ed.D. program, students must meet all departmental and University admission requirements (see page 58). For further information on admission, as well as other aspects of a specific degree program, the Graduate School of Education should be contacted directly.

The following Ed.D. degrees are currently offered: Educational Leadership; Administration; Postsecondary Education; Curriculum and Instruction; Special and Counselor Education.

Degree requirements

MASTER'S DEGREE

Language requirement. The language requirement for M.A. and M.A.T. students must be met before any final exam is taken or final graduation paperwork can be approved.

Options for meeting the graduate second language requirement for M.A. and M.A.T. students. The Department of World Languages and Literatures has determined that the graduate second language requirement can be met in the following ways:

1. Equivalent coursework: Students who have passed a course equivalent to PSU level 203 or higher in a second language will be deemed to have met the language requirement. The Office of Graduate Studies will certify completion upon evaluation of the student's academic record if the requirement was completed at PSU. If the requirement was completed at a different institution, the Department of World Languages and Literatures will issue a certificate of completion. M.A. and M.A.T. students are responsible for making their academic records available 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 World 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
- b. A written test such as

- i. The Graduate Student Foreign Language Test
 - ii. The CLEP exam
 - iii. A special exam, administered by the Department of World Languages and Literatures
- c. Coursework after admission: taking a course at level 203 or above in residence or abroad
- d. Special reading courses, if available.

The Department of World 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 and the approval of the chair of the PSU Department of World Languages and Literatures. Certification of having passed a second language examination from an institution other than Portland State University must be approved by the Department Chair of World Languages and Literatures at Portland State University prior to acceptance as fulfillment of the University's master's degree second language competency requirement.

A student whose native language is not English may meet the second language requirement in English, except for students in the M.A. in World Languages and Literatures, 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.

Coursework and program of study. Prior to the completion of 18 credits, the student prepares a proposed program of study in consultation with 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.

A student must be in Regular status in order to have a thesis committee appointed (GO-16M form) or to have any final graduation paperwork approved. A University Conditional status will be automatically converted for Regular status upon the completion of 9 letter-graded graduate credits with a GPA of 3.00 or higher after admission. Department Conditional status can only be removed by the academic department with a request to OGS. For detailed information about Regular, University

Conditional, and Departmental Conditional statuses, see page 59.

If PSU pre-admission credits or reserved credits are to be included on the program of study, the department must submit a request to OGS. If transfer credits (courses taken at any time from another regionally accredited institution) are to be included on the program of study, the Proposed Transfer Credit form (GO-21D) must be submitted to OGS for approval. For detailed information about pre-admission, transfer, and reserved credits, see page 61.

A student must have a B average (3.00 GPA) on the courses applied to the program of study, as well as a minimum 3.00 GPA in all graduate-level courses taken at PSU. Departments may establish a more rigorous standard. Although grades of C+, C, and C- are below the graduate standard, they may be counted as credit toward a master's degree with the specific written approval of the department if taken at PSU after the term of formal admission to the graduate program. 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. Audited courses cannot be used to meet any requirement for master's degrees.

A grade of IP (In Progress) may be used for 501 Research and for 506 Project when a student is progressing in an acceptable manner toward completion of the work; final grades for 501 and 506 credits are assigned by the instructor with a Supplemental Grade Report. An IP grade must be used for 503 Thesis when a student is progressing in an acceptable manner; final grades for 503 credits are assigned by the instructor on the Recommendation for the Degree form (GO-17) and posted to the student's transcript after approval of the thesis and certification for graduation by the Office of Graduate Studies.

All coursework applied to the master's degree program must be completed within the seven years prior to the awarding of the degree (e.g., a course started in the fall term of 2006 will be beyond the seven-year limitation at the close of fall term 2013).

For specific graduation deadline dates, see the Office of Graduate Studies website.

Degree application. Students must file an Application for Awarding of Master's or Doctoral Degree with the Office of Graduate Studies by the first Friday of the anticipated term of graduation. The application is available on the Graduate Studies

website. A \$20 charge will be applied to the student's PSU account after the application is processed by the Office of Graduate Studies.

A student with any M (Missing) grades in PSU graduate courses that could potentially be letter graded will not be certified for graduation, even if the courses are not applied to the student's degree program.

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 2003 may be validated for a graduation term no later than fall 2013). 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. 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 (e.g., 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. Payment must be arranged in advance of the exam through the Office of Graduate Studies and Cashiers.

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 regionally accredited institution, in accordance with the full requirements listed on the GO-15 form.

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 (HSRRC). 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 HSRRC 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 Strategic Partnerships. The student should

allow a minimum of six weeks for the approval process. A student cannot have a thesis committee appointed until HSRRC approval is granted.

Final examination. If a final examination is required by the student's department, it shall be taken after successful completion of any required second 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. A minimum of one graduate credit of registration is required when taking any final oral or written examination.

Oral examinations. 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 student'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. students, one additional member of the committee is required to be a faculty member from the Graduate School of Education or a faculty member with pedagogical expertise in the student's discipline.

Non-thesis final oral examinations (including final project presentations) may be scheduled only during the regular academic terms and no fewer than two weeks before the close of the term of application for graduation (i.e., must be completed one full week before the beginning of finals week). With approval of the examination committee and the department, oral exams may be scheduled during the last two weeks of the term, but this will result in graduation in a subsequent term. 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).

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 student from the master's program or permitting the student to appear for re-examination after a period of at least three months. The result of the second examination is final.

Written examinations. If a final written examination is required, it must be scheduled only during the regular academic terms; for summer term, this applies to the

regular eight-week Summer Session dates. 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.

Thesis. The presentation of a thesis as partial fulfillment of the requirements for the master's degree is required in certain departments and is an option in others. 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. 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 student and must be developed under the direction of the thesis adviser.

The thesis committee must be approved by the Office of Graduate Studies using the GO-16M form in advance of the thesis defense. The committee must consist of at least three and not more than five faculty members. The chair of the thesis committee must be regular, full-time PSU instructional faculty, tenured or tenure-track, assistant professor or higher in rank; the other committee members may be adjunct or fixed-term faculty. Two of the committee members (the committee chair and one other member) must be from the student's department; the third member may be from the student's department or may be PSU faculty from another department or OHSU 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 with the GO-16M form; that member must be in addition to the required three PSU faculty members. All committee members must have master's degrees or higher.

Students must be registered for at least one graduate credit in every term in which they are working on any phase of their thesis, including data development or collection, writing, revision, defense, and finalization through approval by the Office of Graduate Studies. Students must register for at least 6

to 9 credits of 503 Thesis in their department. (Since students must be continuously enrolled while working on the thesis, they frequently accumulate more than 9 credits of 503 Thesis. However, a maximum of 9 credit of 503 Thesis may be applied to the program of study.) IP (In Progress) is the interim grade reported until the thesis is defended and approved by the student's thesis committee. Final grades for thesis credits are not recorded until the thesis has been approved by the Office of Graduate Studies.

A thesis defense may be scheduled only during the regular academic terms, no later than five weeks prior to the close of the term of application for graduation in which the degree will be granted (i.e., must be completed four weeks before the beginning of finals week). For summer term graduation, deadlines apply to the regular eight-week Summer Session dates. Later completion will result in graduation in a subsequent term. The student must deliver a final draft of the thesis to all members of the approved committee no fewer than 14 days before the thesis defense.

All committee members (approved by the GO-16M form) or alternates approved in advance by the Office of Graduate Studies must be present for the thesis defense; one committee member (not the Chair) may participate via video or teleconference. The student must attend the thesis defense in person (i.e., not via video or teleconference). The student's oral presentation should not exceed 60 minutes. The thesis defense is open to the University faculty and may be open to the public at the department's discretion. Passing of the thesis defense requires a majority approval. In case of failure of the thesis defense, the department has the option of disqualifying the student from the master's program or permitting the student to appear for re-examination after a period of at least three months. The result of the second defense is final.

The final thesis must be submitted to the Office of Graduate Studies not later than three weeks prior to the close of the term of application for graduation. For details about thesis formatting, submission, and specific deadlines, see the Office of Graduate Studies website.

Thesis in absentia. With the written approval of the department or program chair, the Dean of Graduate Studies may authorize the thesis to be prepared in absentia. The student must register for at least one graduate credit at PSU at the beginning of each term and conduct the research under the direction of the thesis adviser.

DOCTORAL DEGREE

Preliminary examination. 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 doctoral program.

Advisory committee. An advisory committee for the doctoral degree student must 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 will be designated by the program director to advise the student and to meet in regular consultation concerning the program of study and research. The additional members of the advisory committee will be appointed after successful completion of 9 credits and not later than six months prior to the completion of the comprehensive examinations.

Language requirement. For the Ph.D. degree, the student may be required to demonstrate competency in at least one second language. This requirement is determined by the governing unit of the student's program, department, or school. Any second language requirement must be completed before the comprehensive examinations.

Residency requirement. A minimum of three consecutive terms must be spent in full-time residence, with registration for and successful completion of 9 or more graduate credits applicable to the degree each term, after admission to the doctoral program at PSU. Summer term may be included (e.g., spring, summer, fall 2012) or excluded (i.e., spring 2012, fall 2013, winter 2013) in calculating consecutive terms.

Coursework and doctoral program of study. The doctoral program of study includes coursework, research, internships, and/or seminar credits according to the requirements of the individual doctoral program. A minimum 27 credits of 603 Dissertation is required for all Ph.D. students; a minimum of 18 credits of 603 Dissertation is required for all Ed.D. students. A minimum of three academic years of satisfactory graduate study beyond the bachelor's degree is required (equivalent to 81 quarter credits minimum) for all doctoral degrees.

For doctoral degrees, pre-admission and transfer credits must be graduate credit taken at a regionally accredited institution and applicable to a graduate degree program without qualification at the originating institution. Pre-admission and transfer credits cannot be correspondence credit. For doctoral degrees, pre-admission and transfer limits are at the discretion of the individual doctoral programs. Transfer credits are approved via a GO-21D form submitted to OGS. While potentially all

coursework for the degree can be transferred from another institution, the following items must be completed at PSU: comprehensive exams, residency, proposal, advancement to candidacy, and dissertation research.

A student must have a B average (3.00 GPA) on the courses applied to the program of study, as well as a minimum 3.00 GPA in all graduate-level courses taken at PSU. Doctoral programs may establish a more rigorous standard. Although grades of C+, C, and C- are below the graduate standard, they may be counted as credit toward a doctoral degree with the specific written approval of the doctoral program if taken at PSU after the term of formal admission. 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. Audited courses cannot be used to meet any requirement for doctoral degrees.

A grade of IP (In Progress) may be used for 601 Research and for 606 Project when a student is progressing in an acceptable manner toward completion of the work; final grades for 601 and 606 credits are assigned by the instructor with a Supplemental Grade Report. An IP grade must be used for 603 Dissertation when a student is progressing in an acceptable manner; final grades for 603 Dissertation credits are assigned by the instructor on the Recommendation for the Degree form (GO-17D) and posted to the student's transcript after approval of the dissertation and certification for graduation by the Office of Graduate Studies.

All coursework on the program of study, with the possible exception of seminar and internships, must be completed before a student can be advanced to doctoral candidacy. All coursework on the program of study must be satisfactorily completed before graduation.

For students entering a doctoral program with a master's degree, a maximum of five years will be allowed from admission to completion of all required comprehensive examinations. For students entering with a bachelor's degree, a maximum of two additional years will be added to this limit, for a maximum of seven years from admission to completion of all comprehensive examinations. Failure to meet this time limit will result in cancellation of admission to the doctoral program.

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. Students must be registered for a minimum of one graduate credit during the term comprehensive exams are taken. Comprehensive exams are scheduled and administered in accordance with the established rules of the program, which must be made publically available to students via the program's website or doctoral student handbook. Comprehensive exams can only be offered during regular academic terms, i.e., not between terms.

If the student fails the entire comprehensive exam or any section thereof, the doctoral program 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 results of the second examination are final.

A maximum of three years will be allowed from the completion of comprehensive examinations to advancement to candidacy. Failure to meet this time limit will result in cancellation of admission to the doctoral program.

Dissertation proposal. After passing the comprehensive examination and identifying a dissertation topic, a dissertation committee is appointed and the student must pass a proposal defense. The dissertation committee will take the place of the advisory committee and the faculty adviser is superseded by the dissertation adviser. The dissertation committee must be approved by the Office of Graduate Studies using the Appointment of Doctoral Dissertation Committee form (GO-16D).

A doctoral student must be in Regular status in order to have a dissertation committee appointed. A University Conditional status will be automatically converted for Regular status upon the completion of 9 letter-graded graduate credits with a GPA of 3.00 or higher after admission. Department Conditional status can only be removed by the doctoral program with a request to OGS. For detailed information about Regular, University Conditional, and Departmental Conditional statuses, see page 59.

The dissertation committee must consist of four to six PSU faculty members: the dissertation adviser, a minimum of two and a maximum of four regular members, and the Graduate Office Representative. The chair of the dissertation committee and the Graduate Office Representative must be regular, full-time PSU instructional faculty, tenured or tenure-track, assistant professor or higher in rank; the other two to four committee members may include adjunct or fixed-term faculty and/or one member of

the OHSU faculty. If it is necessary to go off-campus for one committee member with specific expertise not available among PSU faculty, a curriculum vitae (CV) for that proposed member must be presented with the GO-16D form. This off-campus member may substitute for one of the two to four regular committee members. All committee members must have doctoral degrees.

No proposal defense shall be valid without a dissertation committee approved by the Office of Graduate Studies. The GO-16D form should be submitted to the Office of Graduate Studies a minimum of six weeks in advance of the estimated date of the dissertation proposal meeting. The student must deliver a draft of the dissertation proposal to all members of the approved committee no fewer than 14 days before the proposal defense.

All appointed committee members, or alternates approved in advance by the Office of Graduate Studies, must be present for the proposal defense; one regular committee member (not the Chair or Graduate Office Representative) may participate via video or teleconference. The student must attend the proposal defense in person (i.e., not via video or teleconference). The proposal defense must be a formal meeting of the entire approved dissertation committee at which the student will make an oral presentation of the written proposal for discussion, evaluation, and suggested modification. 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.

The doctoral program recommends the student for advancement to candidacy once the dissertation proposal has been approved.

Human Subjects Research Review

Committee. After proposal approval, the student submits a Human Subjects Research Review Committee (HSRRC) application to the Office of Research and Strategic Partnerships if human subjects are involved in the research in any way. A student cannot be advanced to candidacy until HSRRC approval is granted. The student should allow a minimum of six weeks for the approval process. 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. As a best practice, the Office of Research and Strategic Partnerships recommends that students keep their HSRRC approval renewed through the final defense stage. For questions about HSRRC approval, contact the HSRRC directly.

Advancement to Candidacy. A student is advanced to candidacy after successful defense of the dissertation proposal and with the recommendation of the doctoral program, after verification of the student's program of study, and after HSRRC approval has been granted (if applicable). 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 Dean of Graduate Studies retains final approval authority for advancement to candidacy.

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 (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. Advancement to a second period of candidacy requires the passing of the regular, or a special, comprehensive examination. Approvals for a second period of candidacy are required from the doctoral program and the Dean of Graduate Studies; the maximum time limit (which will be less than five years) will be determined by the doctoral program and the Dean of Graduate Studies.

Dissertation preparation. With guidance of the dissertation committee, the candidate presents a dissertation 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. Until the degree is granted, the student enrolls for the number of graduate credits appropriate to the amount of University services utilized, as determined by the dissertation adviser, with a minimum of one graduate credit each term. Ph.D. students must register for a

minimum of 27 credits of 603 Dissertation before graduation; Ed.D. students must register for a minimum of 18 credits of 603 Dissertation before graduation. Continuous enrollment of a minimum 1 graduate credit is required through the term a student graduates, even if this results in more than 27 (18) credits of 603 Dissertation at the time of graduation. Ph.D. and Ed.D. students should only register for 603 Dissertation credits after advancement to candidacy.

Degree application. Students must file an Application for Awarding of Master's or Doctoral Degree with the Office of Graduate Studies by the first Friday of the anticipated term of graduation. The application is available on the Graduate Studies website. A \$20 charge will be applied to the student's PSU account after the application is processed by the Office of Graduate Studies. A student with any M (Missing) grades in PSU graduate courses that could potentially be letter graded will not be certified for graduation, even if the courses are not applied to the student's degree program.

Dissertation defense. After preparation of the written dissertation, the candidate's dissertation committee will conduct a dissertation defense. A dissertation defense may be scheduled only during the regular academic terms, no later than five weeks prior to the close of the term of application for graduation in which the degree will be granted (i.e., must be completed four weeks before the beginning of finals week). For summer term graduation, deadlines apply to the regular eight-week Summer Session dates. Later completion will result in graduation in a subsequent term. The student must deliver a final draft of the dissertation to all members of the approved committee no fewer than 14 days before the dissertation defense.

The dissertation defense, which is open to the public, is the culminating experience in the doctoral studies. The candidate is expected to prepare an oral presentation on the research methodology and results. The oral presentation should not exceed 60 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 awarding of the doctoral degree.

All committee members or alternates approved in advance by the Dean of Graduate Studies must be present for the dissertation defense; one regular committee member (not the Chair or Graduate Office

Representative) may participate via video or teleconference. The student must attend the proposal defense in person (i.e., not via video or teleconference). For dissertation approval, there may be no more than one dissenting vote on the dissertation defense. If the dissertation defense is not satisfactory, the doctoral program may recommend that the Dean of Graduate Studies permit the candidate to have a second defense after a minimum of three months. The results of the second defense are final.

The final dissertation must be submitted to the Office of Graduate Studies not later than three weeks prior to the close of the term of application for graduation. For details about formatting, submission, and specific deadlines, see the Office of Graduate Studies website.

Time limitations. For students entering a doctoral program with a master's degree, a maximum of five years will be allowed from admission to completion of all required comprehensive examinations. For students entering with a bachelor's degree, a maximum of two additional years will be added to this limit, for a maximum of seven years from admission to completion of all comprehensive examinations. Doctoral programs may have stricter requirements. Failure to meet this time limit will result in cancellation of admission to the doctoral program.

A maximum of three years will be allowed from the completion of comprehensive examinations to advancement to candidacy (doctoral programs may have stricter requirements). Failure to meet this time limit will result in cancellation of admission to the doctoral program.

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.

Advancement to a second period of candidacy requires the passing of the regular, or a special, comprehensive examination. Approvals for a second period of candidacy are required from the doctoral program and the Dean of Graduate Studies; the maximum time limit (which will be less than five years) will be determined by the doctoral program and the Dean of Graduate Studies.

Dissertation in absentia. With the written approval of the doctoral program chair, the Dean of Graduate Studies may authorize the dissertation to be prepared in absentia.

The student must register at PSU at the beginning of each term and conduct the research under the direction of the dissertation adviser.

MASTER OF ARTS, MASTER OF SCIENCE PROGRAM IN INTERDISCIPLINARY STUDIES

This program 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. 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 meet the current Second 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) or 510 (Experimental) 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. Before the final oral examination is scheduled, a faculty member from the Office of Graduate Studies will be added to the student's committee.

College of the Arts

BARBARA SESTAK, DEAN
SARAH ANDREWS-COLLIER, ASSOCIATE DEAN
DARRELL GRANT, ASSOCIATE DEAN
LINCOLN HALL 349,
503-725-3105

www.pdx.edu/the-arts

B.A., B.S.—Architecture, Art, Arts Studies, Film, Music, and Theater Arts

B.A.—Art History

B.F.A.—Art Practices

B.M.—Performance, Voice, Jazz Studies, Music Education and Composition

Minor in Architecture, Art, Dance, Film Studies, Jazz Studies, Music History, and



Theater Arts
Secondary Education Program in Art,
Music, and Theater Arts

M.Arch

M.F.A.—Contemporary Art Practices

M.A., M.S.—Music

M.M.—Music

M.A., M.S.—Theater Arts

The mission of the College of the Arts is to provide outstanding professional education and training in partnership with the region's working artists, scholars, creative professionals and cultural institutions in the fields of architecture, art and design, music, theatre and film. We create and collaborate, and provide opportunities for faculty and students to shape the future by pushing boundaries. The College of the Arts is a strategic partner in preparing talented young people for leadership in creative careers. Students are challenged to see their work within the artistic and critical traditions that provoke their own creative thinking and to seek interdisciplinary approaches and collaboration in both a local and global context. 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.

Undergraduate program

Arts Studies – B.A., B.S. degree. The Arts Studies program gives students the option to major in the arts gaining experience in a minimum of two, three, and possibly all four of the Schools in the College of the Arts (art + design, architecture, music, and theatre & film).

This degree serves those undergraduates who would like to major in the arts in more than one School, or in interdisciplinary art forms. Additionally, the program provides options in the arts for those students who wish to pursue an interest in design or an interest in teaching in elementary schools. At PSU as well as at other institutions, the School of Education is a graduate school. Students are required to have completed a BA/BS degree prior to entering the program. Students who complete the Arts Studies education option degree would then apply to a school of education to complete their teaching education and credentialing.

The degree requires 60 credits of study, including three College courses, two that provide a foundation and a third that serves as a senior project allowing students to apply what they have learned in the study of multiple arts theory and practice. This project may involve community-based learning, internships, apprentice teaching or creative projects. Students take 24 credits of entry level course work in both arts theory and practice continue their exploration in at least two fields, taking 24 upper division credits chosen in consultation in advance with an adviser and finish with the senior project. FPA 445 Senior Project is the culminating course for the Arts Studies major and requires an interdisciplinary independent

project that ties in material from the courses taken for the major.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for the College of the Art's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Degree requirements

Requirements for Bachelor of Arts and Bachelor of Science in Arts Studies. Each student enrolled in the Arts Studies BA/BS must complete 60 hours of coursework from the following schools: Art + Design, Architecture, Music, and Theatre & Film. Students will plan their program under one of three options (general, education, design) with the college advisers or the Associate Dean for the College of the Arts. Students with their adviser should pay particular attention to any courses that are pre-requisites for upper division coursework they may want to take as they plan their program. The current list of courses for each option are found on the Art Studies website <http://www.pdx.edu/the-arts/babs-in-arts-studies>

Each student will participate in a multi-disciplinary course at three points in the curriculum: entering, mid-point and exiting: FPA 101 (4 credits), FPA 301 (4 credits), FPA 445 (4 credits).

The majority of courses necessary to fulfill the Arts Studies BA/BS are currently a part

of the College's course catalogue. The FPA abbreviation is used to distinguish three courses: 101, 301 and 445 that are specifically meant to serve the Arts Studies BA/BS.

Core – required for all students

1. First year *FPA 101 Perspectives in the Arts.....	4
Mid-point *FPA 301 Creative Thinking in the Arts.....	4
Exit course *FPA 445 Senior Project (taken after completion of minimum of 40 credits in the major).....	4
	Sub-Total <u>12</u>
2. Twelve credits taken from each of at least two departments from the approved list of courses; with a minimum of two courses in theory/two in practice from two different departments.....	16
3. 24 upper division credits taken from at least two of the four Schools, with a minimum of 8 in any one. AS majors may take any 300/400 in any of the four areas that have no prerequisites or for which they have taken the appropriate prerequisite ...	24
	Total <u>60</u>

Courses

Courses with an asterisk () are not offered every year.*

*FPA 101

Perspectives in the Arts (4)

This course is the foundational experience for the BA/BS in Arts Studies. The intention is to provide an introduction to fundamental methodologies and ways of thinking, that give students the tools to analyze and deconstruct works of art for meaning, function, success and value. The course will be composed of combinations of readings, activities and assignments, discussions, videos, slides and out of class performances, showings and exhibitions. Students will engage in the practice of

making art as well as in exploring the relationships among the various art fields.

*FPA 301

Creative Thinking in the Arts (4)

This course is designed to introduce students to the theoretical context and practice of creative thinking. While affording freedom for discovery, this course will also offer a focused perspective to strengthen creative thinking, define personal process, construct effective strategies for collaboration, and develop a creative project. Each student will work to identify, access and broaden individual creative abilities. Each session will include practical application of a variety of creative techniques, including artistic, expressive and interdisciplinary strategies; explorations in mind/body connection; sensory and visualization exercises; and activities which utilize multiple intelligences. Intellectual understanding will emerge from both theory and historical context, but will be developed primarily through a regime of self-understanding and activity. Prerequisites: FPA 101 or similar coursework; upper-division standing.

*FPA 445

Senior Project (4)

Senior Project to focus on the body of course work undertaken in the BA/BS Arts Studies curriculum in an original creative work or comparable experience. This work may take the form of a performance, (with the student as creator/producer and/or performer), or a written thesis, gallery exhibition, internship (including but not limited to teaching), media work, practicum, or some other acceptable format. Prerequisites: 40 credits completed in Art Studies coursework or similar coursework; upper-division standing.

School of Architecture

235 Shattuck Hall
503-725-8405
www.pdx.edu/architecture/

B.A., B.S.—Architecture
B.A., B.S.—Architecture with
Concentration in Architectural Project
Management
Minor—Architecture
M. Arch

The architecture program engages students in the fascinating creative questions that pertain to the making of architecture. The program develops the creative identity of each student while nurturing civic responsibility, critical judgment and the representational and technical ability to translate ideas into plausible architectural works. This lies

at the core of an educational experience that provides a rich initiation into the world of architectural practice and preparation for a career as a licensed professional. The heart of the program resides in the architecture design studio and is nourished by the accompanying lecture and seminar courses that bring focused study in the humanities, technology, and the profession. Alongside a progressive attitude to design process and theoretical speculation, the program participates in the advancement of knowledge in contemporary issues and technologies of sustainable urban living and environmental stewardship.

In giving place to human situations architecture bears the responsibility of being the

most public of the arts and it cannot be practiced meaningfully without a conversation with the community at large. Our design studio classes, in particular, are sustained by an engagement beyond the university to the life-world we share with our urban cohabitants, including direct interaction with the architectural practice community through our adjunct professors, critics, guest speakers and advisers. This fosters the generation of imaginative responses to the challenge of 'what ought to be' in the context of 'what is'.

The educational emphasis of the program encourages students to recognize the value of creative engagement with the prevailing realities of the city as a primary means of cultural transformation, and to perceive Portland as

an ‘urban laboratory’ for experimental investigations of contemporary human issues. This takes place through interaction and dialogue with the communities at large and by continual acts of interpretive making with diverse media at multiple scales, including full-size fabrication.

Undergraduate programs

Portland State University encourages the study of architecture at the undergraduate level in the context of a broad and enriching liberal arts education. It is important to understand the place of a specialist or professional knowledge of architecture in relation to its wider cultural setting. Students studying for the undergraduate degree would include those seeking a professional education leading to graduate study and eventually licensure, those seeking careers in design and related fields, and those interested in a liberal arts education focused on architecture.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Architecture's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission as an undergraduate is based on general University admission requirements.

Degree requirements

Requirements for the major in Architecture. The B.A./B.S. major in Architecture requires the completion of a minimum of 94 credits in addition to the general University requirements for a degree. The required courses are as follows:

	Credits
Arch 100 Introduction to Architecture.....	4
Arch 101 Introduction to Environmental Design...	4
Arch 120, 121 Visual Communication 1, 2.....	8
Arch 230, 231, 232 Arch & Cultural History I, II, III.....	12
Arch 280, 281 Design Fundamentals Studio 1, 2	12
Portfolio Review/Selected Admissions	
Arch 360, 361, 362 Building Tectonics 1, 2, 3.....	12
Arch 380 Arch Design Studio 1	6
Arch 381 and/or 382 Arch Design Studio 2 and/or 3 and/or Arch 384, 385 and/or Arch Design Focus Studio 1 and 2.....	12
Arch 46x Building Tectonics Elective.....	4
Arch 480, 481 Arch Design Studio 4, 5.....	12
Arch 3xx/4xx Architectural Upper-Division Elective.....	8
Total	94

Admission to the professional track and junior level Architecture Design Studios (380 sequence) 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 of study. At least one of the Architectural upper-division electives must be taken in the ‘Humanities’ subject area (43x numbered classes). Architecture courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling major requirements. All courses used to satisfy the major requirements must be graded C- or higher.

Students receiving a grade of D+, D or D- in any Architectural Design Studio class will not be permitted to progress to the next class in the sequence until a grade of C- or above has been earned in the same class.

Requirements for the major in Architecture with a 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 39, the student who specializes in architectural project management is expected to meet the following 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 280, 281 Design Fundamentals Studio 1, 2.....	12
Arch 340 The Profession of Architecture	4
Arch 341 Developing as a Professional	4
Arch 360, 361 Building Tectonics 1, 2.....	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 280, 281 Design Fundamentals Studio 1, 2.....	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 minor requirements.

Eighteen of the final 24 credits must be taken in residence at PSU.

Graduate program

The 2-year professional Master of Architecture at Portland State University encourages substantive investigation of significant urban situations and prevailing architectural issues pertinent to contemporary human experience. It also aims to satisfy the demands of an accredited first professional degree in architecture as determined by the National Architectural Accrediting Board.

Through a series of focused design studios, and courses in humanities, technology and the profession, the first year of the program encourages depth in questioning, aptitude in discursive thinking, and versatility in means of representation as each student assimilates the skills, knowledge and dexterity to negotiate the professional demands of comprehensive design while developing a mode of creative inquiry that extends beyond established conventions to possibilities yet to be tested in a critical arena. Student generated questions and polemics will form the inspiration for the second year Design Thesis exploration culminating in a unique thesis proposal fully articulated in drawings, models and text.

Admission requirements

To be eligible to enter to the 2-year Master of Architecture program a candidate must have completed a 4-year undergraduate pre-professional degree majoring in architecture (BA, BS or BFA). Admission to the graduate program is based upon satisfaction of the institutional requirements together with competitive application. Submission materials include a portfolio of architectural design and other creative work, a statement of intent, undergraduate GPA, a GRE score, curriculum vitae, and at least 3 letters of recommendation.

Requirements for the Master of Architecture. Students must complete a minimum of 74 graduate level credits including the following:

	Credits
Arch 530 Contemporary Architectural Theory.....	4
Arch 53x Architectural Theory Elective	4
Arch 540 Professional Practice	4
Arch 54x Professional Practice Elective.....	4
Arch 560 Advanced Architectural Technology.....	4
Arch 580, 581, 582 Arch Design Studio 7, 8, 9	18
Arch 511 Pro-Thesis Seminar	4
Arch 584 Design Development Studio.....	6
Arch 585 Design Thesis.....	6
Arch 586 Integrated Systems.....	6
5xx Special Interest Electives	14
Total	74

The graduate program is designed for students intending to become licensed architects and is in Candidacy status for professional accreditation with the National

Architectural Accrediting Board.

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The NAAB grants candidacy status to new programs that have developed viable plans for achieving initial accreditation. Candidacy status indicates that a program should be accredited within 6 years of achieving candidacy, if its plan is properly implemented. In order to meet the education requirement set forth by the National Council of Architectural Registration Boards, an applicant for an NCARB Certificate must hold a professional degree in architecture from a program accredited by the NAAB; the degree must have been awarded not more than two years prior to initial accreditation. However, meeting the education requirement for the NCARB Certificate may not be equivalent to meeting the education requirement for registration in a specific jurisdiction. Please contact NCARB for more information.

Portland State University, Department of Architecture was granted candidacy status for the following professional degree program in architecture: M.Arch (pre-professional degree + 74 graduate credits): 2008. Continuation of candidacy granted: 2010. Projected year of initial accreditation: 2012.

The School of Architecture reserves the right to retain for archival or exhibition purposes any student work executed as part of a School of Architecture instructional program. In addition, the School 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.

Owning a laptop computer system will provide critical advantages in your progress through the Architecture program, especially

the ability to work in any of our classrooms and studios. Therefore, beginning in the 2009-2010 academic year, all students studying Architecture are required to own a laptop computer that meets minimum system specifications published by the School, including software required for courses in our program. Contact the School office for complete information on our Student Laptop Purchase Program.

Grades of C+ or lower will not count towards meeting Master of Architecture degree requirements. Students are strongly advised to become familiar with the standards for academic accomplishment described in detail in the Graduate Studies section of this bulletin.

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 101

Introduction to Environmental Design (4)

Concepts and theories of the fields of environmental and sustainable design. Includes a study of perceptual, technical, and philosophical concepts of natural and built resources through lectures, design projects, and individual projects. Open to non-majors.

Arch 120

Visual Communication 1 (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 121

Visual Communication 2 (4)

Develops skills in graphic visualization, representation, and communication as used in architecture and related design fields. Concepts and conventions, from freehand to digital media and production, used as a means to imagine, develop and represent design ideas. Prerequisite: Arch 120.

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 121.

Arch 230, 231, 232

Architecture and Cultural

History I, II, III (4, 4, 4)

A series of courses tracing the history of architecture understood as a cultural product from the early Paleolithic Age up to the 20th century. The first course covers from the early Stone Age up to the Iron Age, the second course begins in the 1st century C.E. to cover up 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 in a global context as embodied in architectonic forms and experiences. Must be taken in sequence.

Arch 280, 281

Design Fundamentals Studio 1,2 (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. Prerequisites: Arch 100, 101, 121.

*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 course-work, 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, 362**Building Tectonics 1, 2, 3 (4, 4)**

A three-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. Courses must be taken in sequence. Prerequisites: Arch 281.

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 1, 2, 3 (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 281.

Arch 384**Architectural Design Focus Studio I (3)**

Studio investigations of architectural designs based on supporting human activities, structure and theory. Includes individual criticism, lectures and seminars. Prerequisite: Arch 380.

Arch 385**Architectural Design Focus Studio II (3)**

Studio investigations of architectural designs based on supporting human activities, structure and theory. Includes individual criticism, lectures and seminars. Prerequisite: Arch 380.

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 421/521**Urban Design Methods (4)**

Introduction to analytical and synthetic research methodologies inherent in the design of natural, architectural and urban contexts essential to contemporary urban design practice.

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. Prerequisites: Arch 281.

Arch 430**Architectural Theory (4)**

Introduction to the content of theoretical propositions in architecture and their influence upon the directions, emphases and outcomes of creative making within an historical context. Prerequisites Arch 232.

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 432/532**History and Theory of Urban Design (3)**

Introduction to the development of historical and contemporary urban design with parallel developments in architecture and urban planning. Theoretical models are related to current practices in the design of various sociopolitical, environmental and aesthetic urban contexts.

Arch 433/533**Contemporary Issues Seminar (4)**

In-depth exploration of selected topics that explore contemporary issues informing the discipline of architecture. Whether cultural, social, political, economic, aesthetic, environmental or other, contemporary issues and voices contribute to the dynamic and evolving production, construction and inhabitation of architecture. Topics may include: visual art, literature, aesthetics, ethics, philosophy, politics, culture(s), and technology. Prerequisites: upper level undergraduate or graduate standing.

Arch 434/534**Topics in Architectural History and Theory (4)**

Seminar on selected topics focusing on the history and theory of architecture. Consists of discussions, presentations, lectures, and readings on relevant topics as they have historically emerged within the discipline of architecture. May focus on specific historical periods and/or may include philosophy of architecture, architectural representation, architecture and the city. Course may be repeated for credit with different topics. Prerequisites: upper division or graduate standing.

Arch 435/535**Topics in Modernism (4)**

Seminar investigating the influences and products of industrialized cultures as they relate to the discipline of architecture. Depending on the instructor, emphasis may be on the critical study of cities, buildings, or landscapes, but each will be explored within the comprehensive understanding of the cultural and social conditions of Modernism. Course may be repeated for credit with different topics. Prerequisites: upper division or graduate 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 mile-

stones, 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 460

Concepts in Building Technology (4)

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 of formal integration with architectural design area emphasized. Prerequisites: Arch 362.

Arch 462/562

Advanced Architectural Materials (4)

Seminar building on basic properties of architectural materials learned in Arch 360. A research-based course looking at creative use and reuse of materials for construction emphasizing sustainable solutions. Includes case study investigations of contemporary innovative material usage and student-designed building component. Prerequisites: Arch 362 or graduate standing.

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 467

Building Structures (4)

A lecture course that develops a basic understanding of structural elements and their implications for architectural form. Major topics include assembly, statics, properties of common structural materials, vertical and lateral load resisting systems. Precedent studies investigate structure in historical and contemporary buildings. Prerequisites: Arch 362.

Arch 480, 481, 482

Architectural Design Studio 4, 5, 6 (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 381 or 382 and Arch 362.

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. Prerequisites: Arch 582.

Arch 530

Contemporary Architectural Theory (4)

Seminar course investigating architectural theory and critical thought by examination of key texts and contemporary architectural works.

Arch 543

Topics in Professional Practice (4)

Focused investigation of key aspects of professional architectural practice through direct case study analysis, reflection and critical appraisal. Emphasis on understanding the application of professionally inspired principles and processes in contemporary architectural practice. Prerequisites: Arch 540.

Arch 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 classroom, as well as fieldwork, and laboratory investigation of current technologies for envelope, mechanical and thermal comfort systems, and lighting and day-lighting strategies. Strategies of formal integration with architectural design are emphasized.

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. Prerequisites: Arch 511.

Arch 567

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 467.

Arch 580, 581, 582
Architectural Design
Studio 7, 8, 9 (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 481.

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 transforma-

tion of a specific urban situation. Prerequisites: Arch 511, 584.

Arch 586
Integrated Systems (6)

A companion course to Architectural Design Studio 9, this studio addresses the integration of building systems through detailed development of the design proposition begun in Arch 582 leading to a comprehensive design. Addresses application and technical documentation of building systems including materials, envelope, environmental controls, building services, and structure. Prerequisites: Arch 582.

110 Art Building
503-725-3515
<http://www.pdx.edu/art-design/>

B.A., B.S.—Concentration in Art Practices and Graphic Design
B.A. only—Art History, Concentration in Art History
B.F.A.—Art Practices
Minors in Art History, Design Management, Drawing/Painting/Printmaking, Graphic Design, Photography, Sculpture and Time Arts
Secondary Education Program
M.F.A. in Contemporary Art Practices

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 School of Art and Design 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 background well suited for applications that are wide reaching and greatly rewarding.

The mission of the School of Art and Design at Portland State University is to foster creative and critical thinking and encourage its students to recognize and apply the power of art in contemporary society.

Offering a broad curriculum, including undergraduate degrees in Art History, Art

Practices, and Graphic Design, as well as MFA and BFA degrees in Art Practices, the school seeks a diverse student population and takes advantage of its geographical location in the heart of Portland, extending our classroom activities into the city's vibrant cultural community.

With a dedicated faculty actively engaged in their own creative and scholarly research, our student body of aspiring artists, designers and art historians explores new avenues of expression, prepares for professional and academic careers, and builds theoretical and practical foundations for future artistic and intellectual discovery.

The foundation of the School of Art and Design 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 theories, the terminology and processes specific to the production of the visual arts.

Because learning "to see" is a 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 School of Art and Design 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. 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 School of Art and Design 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 88 credits in art courses. Included are extensive experiences in studio work and a comprehensive study of the history of art. Majors in art history require a minimum of 68 credits.

Art history—B.A. degree only. Art history—B.A. degree only. The in-depth study of the history of art enables 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 three distinct tracks for the art history B.A. The first

School of Art and Design

option is especially suited to preparation for a career that involves research and writing—such as museum work, art criticism, or teaching art history—and is focused on cultivating the ability to think critically and creatively about visual as well as textual resources. This option requires two seminars (smaller research- and writing- focused classes). The second track provides a minor focus in art practice, giving the student opportunities to develop creativity and skill in both art-making and the historical and critical analysis of art in its many forms. This path is intended for students entering professions that work directly with art objects, such as in art galleries or conservation. The third track allows students with training in graphic design a chance to leverage those skills into a career that also requires the ability to write persuasively and use research resourcefully and creatively.

Graphic design—BA, BS degree. The graphic design program provides a comprehensive education in design principles, applications, theories, history, and practice. The curriculum places particular emphasis on craft, concept, and research skills, as well as the development of effective design processes, the generation of meaningful narratives and story-telling techniques, and engagement with various community partners. Students work with faculty primarily through studio courses that introduce an increasing complexity of design problems and methodologies, combined with opportunities for independent development and interaction with professionals. The 100-level courses in graphic design introduce basic principles of design and art and their specific applications in graphic design. The 200-level courses provide a comprehensive studio experience with an increased emphasis on design thinking.

The first two years of study culminate with a required Sophomore Portfolio Review, occurring once each year at the end of the Spring term. All students majoring in graphic design (including students transferring in with lower- or upper-division credits) must pass this Review to enroll in 300-level graphic design courses. Contact the School of Art and Design at 503-725-3515, or visit the website (<http://www.pdx.edu/art-design/>) or the graphic design program site (<http://psu.gd/>) for details. Only after successfully passing the Review are graphic design majors allowed to continue progression through the program. In their 300- and 400-level course work, students choose courses of increasing specialization, have opportunities for engaging in professional internships, and work to develop a professional portfolio as the culmination of their design studies.

It is important to note that owning a lap-

top computer provides students with critical advantages for successful progression through the graphic design program. Especially in regards to their ability to work in our classrooms and studio spaces, students with laptop computers are better equipped to complete project assignments, conduct research, and maintain an awareness of activities occurring in design both within the program and beyond. Therefore, beginning in the 2010-2011 academic year, all students majoring in graphic design who enroll in 200-level graphic design courses are required to own a laptop computer that meets minimum system specifications, including software required for courses in the program. The current laptop policy is available for review at http://www.pdx.edu/art-design/sites/www.pdx.edu/art-design/files/Laptop_Program_ART10.pdf.

All students majoring in graphic design and taking 100-level graphic design courses are advised to purchase one of the recommended laptop systems. The sooner students make a commitment to owning a laptop system, the sooner the advantages of ownership will impact their ability to perform competitively and successfully in graphic design.

Art Practices—BA, BS degree. The BA/BS is a liberal arts degree in visual art (88 credits). The studio art program provides a comprehensive view of studio art practices, applications, theories, and history, with an emphasis on trends in contemporary art. The first and second years focus on foundation courses including art history, drawing, art theory and design. During the second year the student is encouraged to begin sampling a variety of studio courses in printmaking, painting, drawing, sculpture, digital art and art and social practices. In the third and fourth years students select a focus, further developing their knowledge of visual language, media skills and the conceptual and expressive aspects of their work. Also, during the third and fourth years critical theory and professional practices in art are investigated, aiding the student in establishing a sense of place within the visual arts community.

Art Practices—BFA degree. The BFA (108 credits) is a professional degree, providing students with knowledge and skills designed specifically to prepare them for a career as a practicing artists and/or the master of fine art degree. It is a competitive program that provides a comprehensive education in visual art practices, applications, theories, and history, with an emphasis on trends in contemporary art. The BFA differs from the BA/BS in Art, providing greater depth conceptually and technically, as well as emphasizing professional preparation. Students interested in the BFA degree will

submit a portfolio for review at the end of spring quarter in their third year of study. (Submission is made only after completing 72 of the required 88 credits and selected art courses in the first three years of the BA/BS degree program.) The BFA degree requires the student to research, develop, assemble and present a strong body of well conceived and executed work. The culminating body of work is presented in a thesis exhibition and includes an oral defense.

For the most up to date information on the BFA and how to apply please visit our website <http://www.pdx.edu/art-design/bfa-in-art-practices>

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Art and Design's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Undergraduate admission requirements

Admission to the school is based on general admission to the University. See the PSU Bulletin for more information.

When a student is accepted to Portland State University and selects a major within the School of Art and Design, the student is formally admitted to the university and is pre-admitted to the department. Pre-admission ends however, in a student's junior year.

When a student reaches the junior year based on the University's definition of class standing (90-134 credits), the student is formally and automatically admitted into the School of Art and Design and College of the Arts.

Formal admission allows the student to continue on his or her degree path unhindered. Once admitted, the student will be authorized to take otherwise college restricted upper-division courses.

After being admitted to the school and college, Graphic Design students must also pass a sophomore portfolio review to be eligible to take 300 and 400 level graphic design courses. Students hoping to be accepted to the BFA program in Art Practices must submit a formal application near the end of their third year and be formally accepted into that degree program.

Changing majors or opting-out. Once formally admitted into the College of the Arts a student may decide he or she would rather not continue working toward a degree in the School of Art and Design. In this case, the student will need to formally change the major through the Office of Admissions. In addition, the student must notify the School of Art and Design by

e-mail of this status change (art@pdx.edu). Once the major change has been verified, admission to the College of the Arts will be cancelled and the student will no longer be able to register for college restricted courses.

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. Please visit the the school web site, <http://www.pdx.edu/art-design/> or office to obtain a "Program Major Course Distribution 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 the school 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 focus of study in art.

To satisfy school 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's focus area.

The School of Art and Design reserves the right to cancel any course that does not have sufficient enrollments, in accordance with University policy.

Graduate programs

The School of Art and Design offers a two-year in-residency study program or a three-year low-residency program leading to the Master of Fine Arts degree in Contemporary Art Practice. In residency students choose an emphasis in either Studio Practice or Social Practice and low-residency student must select Social Practice. These 90-credit programs prepare the student to be a practicing artist within a regional, national, and international arts community. The student will acquire a strong theoretical foundation in order to analyze and discuss their work and

that of others as well as to place their work in a historical and socio-cultural context. In addition, the student cultivates work, process, and research habits required of the self-directed artist. The MFA in Contemporary Art Practices is a small, individualized program that offers the student great accessibility to the MFA faculty on an ongoing basis, providing constant assessment and direction.

Graduate admission requirements

Application for admission to the MFA program must be made by February 1 prior to the fall term in which the student intends to begin work toward the degree.

Applicants must have a B.A., B.S., or B.F.A. degree in Art or a related field. Rare exceptions may be made for related experience and a solid art history background.

The application is a dual process between the School of Art and Design and the Office of Admissions. Therefore the applicant also must contact the PSU Office of Admissions for a graduate admission application.

The school application is submitted online. For the most up to date information on the MFA program and its application process please visit our web site <http://www.pdx.edu/art-design/mfa-admissions-requirements>.

MFA degree requirements

All students will complete at least 90 credits. Working with designated faculty during the first year, students are encouraged to explore new media, models and ideas as they develop a proposal for creative activity that culminates with an exhibition project in the their final year of their program.

Students are admitted conditionally and must pass a midpoint candidacy review in order to gain regular admission to the university and continue work towards their degree. (Students in-residency are receive a candidacy review at the end of their first year and low-residency resident students are reviewed at the end of their second year), Individual faculty discussions, peer critiques, seminars in current issues/contemporary art history and weekly lectures by nationally and internationally recognized visiting artists help students broaden their field of inquiry.

Students complete 90 credits, distributed in the following way:

- 40 credits Contemporary Art Practice/ Directed Studies
- 12 credits Visiting Artist Program/ Group Critique
- 12 credits Contemporary Art History/ Theory
- 8 credits Electives (outside Art Department)
- 12 credits Graduate Seminars
- 6 credits Exhibition Project/Statement

Upon successful completion of the candidacy review students work with a faculty adviser in their specified concentration to produce their exhibition project. The project is presented in a public exhibition or other appropriate form in the spring quarter of the second year or third year.

ART EDUCATION: SECONDARY EDUCATION PROGRAM

Grades K through 12. Students who wish to teach art in the public schools must first complete a B.A., B.S. or B.F.A. in Art before applying to the School of Education for teacher training in the graduate program.

Prospective teachers should contact the art education adviser in the School of Art and Design before beginning the program.

Each student's program is tailored to meet 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.

Department Archival Policy

The School of Art and Design reserves the right to retain for archival or exhibition purposes any student work executed as part of a School of Art and Design 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. Prerequisites: Upper-division standing. 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. Prerequisites: Upper-division standing. Open to non-majors.

ArH 392*History and Contemporary Issues in Photography (4)**

The history of photography focusing on its exemplary masters, the impact of photographic technologies and techniques, contemporary issues of aesthetics and ethics in photography, the role of photography in the fine arts and design, and emerging photographic media.

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 School of Art and Design 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 School of Art and Design 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 School of Art and Design required.

ArH 407/507**Seminar (Credit to be arranged.)****ArH 410/510****Selected Topics (Credit to be arranged.)*****ArH 411****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. Prerequisites: Upper-division standing. Open to non-majors.

ArH 412*Japanese Buddhist Art (4)**

A survey of the Japanese Buddhist art and architecture, including: sculpture, painting, Shingon Buddhist art, Zen garden and architecture, and ink paintings through selected examples from the 6th century to the 18th century. Prerequisites: Upper-division standing. Open to non-majors.

ArH 415*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. Prerequisites: Upper-division standing. Open to non-majors.

ArH 422*Chinese Painting (4)**

A concentrated study of the Chinese paintings from the 3rd century B.C.E. to the 18th century. Prerequisites: Upper-division standing. Open to non-majors.

ArH 423*Japanese Painting (4)**

A survey of Japanese painting from the 4th century to the 19th century. Buddhist paintings, ink paintings, and decorative paintings. Prerequisites: Upper-division standing. Open to non-majors.

ArH 425*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. Prerequisites: Upper-division standing. Open to non-majors.

ArH 426*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. This course is the same as BSt 470/570; course may be taken only once for credit. Prerequisites: Upper-division standing. Open to non-majors.

ArH 431*Women In The Visual Arts (4)**

This course studies both the representation of women and gender and the art and patronage by women in various media (painting, sculpture, architecture, printmaking, photography, textiles and mixed media). Explores 19th century and 20th century America and Europe. This is the same course as WS 431/531 and may be taken only once for credit. Prerequisites for ArH 431 (for art and art history majors only) ArH 206. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 432*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. Prerequisites (for art and art history majors only) ArH 206 and either 204 or 205. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 437*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. Prerequisites (for art and art history majors only): ARH 205 or 206. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 439, 440*History of Architecture (4, 4)**

A history of architecture from Prehistory to Post-Modernism. Prerequisites for ARH 439 (for art and art history majors only) ARH 204 or 205; Prerequisites for ARH 440 (for art and art history majors only) ARH 206. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 449/549*Art History Methods (4)**

Seminar for juniors and seniors. 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. Prerequisites: at least three prior upper-division art history courses. Open to non-majors.

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 or theme, for example, Pre-Columbian art and architecture or Medieval Venetian Architecture. May be repeated for credit with different topics. Prerequisite (for art and art history majors only): ArH 204, 205, or 206. Open to non-majors,

ArH 451, 452, 453*Ancient Art (4, 4, 4)**

Art and architecture of the ancient world from Paleolithic through Roman times. ArH 451: Prehistoric, Egyptian, Mesopotamian. ArH 452: Aegean and Greek. ArH 453: Etruscan and Roman. Prerequisites (for art and art history majors only): ARH 204. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 456*Early Medieval Art (4)**

Focuses on the art and architecture of Early Christian, Celtic, Carolingian, and early Islamic world. Prerequisites (for art and art history majors only): ARH 204. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 457*Byzantine Art (4)**

Focuses on the art and architecture of the Byzantine world from the founding to the fall of Constantinople (330-1453 A.D.). Prerequisites (for art and art history majors only): ARH 204. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 458*Romanesque Art (4)**

Focuses on the art and architecture of the Romanesque, Crusader, and medieval Islamic world. Prerequisite (for art and art history majors only): ArH 205. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 459*Gothic Art (4)**

Studies Gothic art and architecture across Europe from the 13th to the 16th centuries. Topics include the development of the cathedral, and the rise of the city, and artists such as Giotto and Duccio. Prerequisites (for art and art history majors only): ArH 205. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 461*Northern Renaissance Art (4)**

Manuscript illumination, painting, and sculpture in the Netherlands, Germany, and France from the late 14th to the 16th century. Prerequisites (for art and art history majors only): ArH 205. Prerequisites (for art and art history majors only): ARH 204. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 471, 472, 473*Italian Renaissance Art (4, 4, 4)**

Painting, sculpture, and architecture from the 13th to the 16th century in Italy. Prerequisites (for art and art history majors only): ArH 205. Prerequisites (for art and art history majors only): ArH 205. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 476, 477, 478*Baroque Art (4, 4, 4)**

A study of European art and architecture from the late 16th to the mid-18th century. ArH 476: Italy; ArH 477: The Netherlands; ArH 478: Spain and the Americas. Prerequisites (for art and art history majors only): ArH 205. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 481, 482*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.

Prerequisites (for art and art history majors only): ArH 206. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 486, 487*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. Prerequisites (for art and art history majors only): ArH 206. Prerequisites for all other majors: Upper-division standing. Open to non-majors.

ArH 491/591, 492/592, 493/593*Modern Art (4, 4, 4)**

A chronological survey of modern and postmodern art in Europe and the U.S. in the 20th century. ArH 491: from Art Nouveau to Surrealism; ArH 492: from American Scene Painting through the rebellious sixties; ArH 493: from Conceptual art through the end of the century. Open to non-majors. Prerequisites: ArH 206 or permission of the instructor.

ArH 498*Contemporary Art I (4)**

This course will explore major developments in the art world from the late 20th century. We will look at the origins of contemporary art, the transition from Modernism to Post-Modernism, important themes in contemporary art, and issues facing the practicing artist of today, in the US and globally. Material will be covered through textbook readings, occasional web articles and website; through slide lectures/presentations and films, a visit to the Portland Art Museum as well as your own exploration of contemporary art in Portland. Prerequisite: ARH 206. Recommended prerequisites: ARH 491, 492, 493. Open to non-majors.

ArH 499*Contemporary Art II (4)**

A thematic approach will be used to examine historical dimensions of contemporary art practices in the 21st century. Explores themes, movements and trends as much as individual artists or works of art. Places art into a broad historical and social context, and looking at cross-cultural and interdisciplinary connections. Material will be presented through in-class instruction and field trips. Prerequisites: ARH 206. Recommended prerequisites: ARH 491, 492, 493, 498. Open to non-majors.

†ArH 598**Contemporary Art I (4)**

This course will explore major developments in the art world from the late 20th century. We will look at the origins of contemporary art, the transition from Modernism to Post-Modernism, important themes in contemporary art, and issues facing the practicing artist of today, in the US and globally. Material will be covered through textbook readings, occasional web articles and website; through slide lectures/presentations and films, a visit to the Portland Art Museum as well as your independent research. Prerequisites: Graduate standing in the MFA program.

† 500-level classes intended for M.F.A. students only.

†ArH 598**Contemporary Art II (4)**

A thematic approach will be used to examine historical dimensions of contemporary art practices in the 21st century. Explores themes, movements and trends as much as individual artists or works

of art. Places art into a broad historical and social context, and looking at cross-cultural and interdisciplinary connections. Material will be presented through in-class instruction and field trips. Prerequisites: Graduate standing in the MFA program. Recommended prerequisites: ArH 591, 592, 593, 598.

† 500-level classes intended for M.F.A. students only.

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 111*Design Thinking (4)**

Seminar-style course addressing what graphic design is and examining the many ways in which design can engage audiences. Students explore the language and media of graphic design, considering its conceptual and practical methodologies in order to generate an understanding of the ways which design can be framed, made, and used. Fosters a more nuanced conception of the larger discourse of graphic design.

Art 115**Foundation Studio I: 2-D Design (4)**

Introduces fundamental principles and their application through the concepts, processes and practices of two-dimensional design and color theory. Students investigate visual problems, develop a visual language for communicating ideas and explore basic materials and techniques. Methods for critical evaluation draw on examples of historical and contemporary art and design, aesthetics and concepts of visual culture. No prerequisite required. Open to non-majors.

Art 117**Foundation Studio II: 3-D Design (4)**

Introduces fundamental principles and their application through the concepts, processes and practices of three-dimensional design and continues the exploration of color theory. Students investigate physical properties of form, the interaction of forms in space, the inherent qualities of materials, basic methods of fabrication and methods for critically evaluating works of art and design. Illustrated lectures, reading, discussion and studio projects place the exploration within contemporary and art historical contexts. No prerequisite required. Open to non-majors.

Art 118**Introduction to Typography and Communication Design (4)**

Applies the fundamental design principles covered in 2-D design and color theory to the visual language of communication design—specifically typography. Projects address the various roles of typography within the discipline. Methods, strategies, and processes for thinking creatively and solving design

problems are investigated. Manual skills with tools are developed. Prerequisites: Art 115. It's recommended that you take this class after or concurrently with Art 120. Open to non-majors with instructor's consent.

Art 119
Foundation Studio III: Digital Media/ Time Design (4)

Introduction to concepts, tools, techniques, processes, and practices of digital and time-based media. Students survey and explore a range of digital media, including photographic imaging, illustration, visual narrative, video, and animation. Lectures, readings, discussion, and studio projects place the exploration within contemporary and art historical contexts. No prerequisite required. Open to non-majors.

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, layering and combining graphics, and translating between digital and physical media. Teaches methods to implement creative solutions with digital tools. Prerequisites: Art 115 or Art 100 for non-majors; Open to non-majors with instructor's consent.

Art 131
Introduction to Drawing I (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. 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. Open to non-majors with instructor's consent or departmental approval.

Art 182
Idea and Form (4)

Introduces an interdisciplinary approach to understanding images and image systems, their history, and their intersection with the larger culture. With an emphasis on critical thinking and analysis, the course investigates the way social and cultural dynamics shape meaning and perception in art and design. Examples from art history, contemporary practice, popular culture and print/broadcast culture are examined through illustrated lectures, discussion, readings, writing assignments and studio projects. Prerequisites: Art 115. Expected preparation: Art 117 and 119. Open to non-majors with instructors consent or departmental approval.

Art 199
Special Studies (Credit to be arranged.)

Art 200
Digital Page Design I (4)

Studio course introducing single and multi-page document design. Projects embody the entire process of creating a publication from concept, through compositional and typographic skills, clear use of hierarchy, and pre-press. Emphasis is placed on work-flow and project management for production of documents in print and electronic media. This course requires that students furnish a laptop computer that meets the departmental

standards in terms of hardware and software (see departmental website for requirements). Prerequisites: Art 120. Open to non-majors with instructor's consent.

Art 203
Making and Meaning (4)

Explores the relationship of material, method and process to the construction of meaning in art practice. Students experiment with various research methods as a way to generate, inspire and inform projects that reflect current topics of interest in contemporary art and culture. Course focus depends on instructor; examples include personal narratives, time, the constructed body, self and ritual, history and memory, public space, concepts of beauty. Prerequisites: Art 182. Maximum 4 credits. Open to non-majors with instructor's consent or departmental approval.

Art 210
Digital Imaging and Illustration I (4)

Studio course in digital image creation with an emphasis on raster and vector-based illustration. Hybrid illustration techniques of mixing hand-made work with digital imagery and photography may also be explored. Basic ways in which form communicates meaning are parsed and explored. This course requires that students furnish a laptop computer that meets the departmental standards for hardware and software. See departmental site for requirements. Prerequisites: Art 120.

Art 224
Narrative and Communication Design (4)

The theme for this course is narrative structures relating to printed matter and motion. Projects explore visual languages, storytelling, storyboards and the visual essay. Problem solving, idea generation, typography, point of view, conceptual thinking and composition are reinforced. Critical readings, group and individual critiques, and written assignments support visual design exploration. Prerequisites: Art 115, 118 and 120 for Graphic Design majors and Graphic Design minors, or Art 100 and 120 for Design Management minors.

Art 225
Communication Design Systems (4)

Introduction to communication design systems, specifically relating to branding and data visualization. Students develop strong conceptual solutions and systems for managing projects with large amounts of information and branding applications. Emphasis is placed on the expansion of a strong design process and a continuing to develop a personal visual language. Theoretical approaches, critical readings, group and individual critiques, and written assignments support visual design exploration. Restricted to Graphic Design majors, and Graphic Design and Design Management minors. Prerequisites: Art 224.

Art 227
Introduction to Art and Social Practices (4)

Introduces an interdisciplinary approach to understanding and producing post-studio/social practice art projects. With an emphasis on critical thinking and analysis, the course investigates the history and application of social practice, post-studio, relational aesthetics, community based art, and non-traditional forms of documentary approaches to art making. The class is not media specific. Students will be encouraged to use a wide range of media and approaches in responding to various class assignments. Exploration of the PSU and Portland community will be an essential part of the class. The students will create work that responds to the dynamics of social spaces and pub-

lic environments. Recommended Prerequisites: Art 182. Maximum 4 credits. Open to non-majors.

Art 230
Drawing Concepts I (4)

Develops drawing and compositional strategies, languages and methods that build on skills learned in foundation courses and embraces a transition from formal observational methods to abstract expressive modes of drawing. Students explore historical and contemporary strategies of visual analysis, surface and space as tools for creative exploration and employ analytical and verbal skills. Prerequisites: Art 115, and Art 131. Open to non-majors with instructor's consent or departmental approval.

Art 250
Life Drawing I (4)

Developing skills for drawing the human figure from observation in a variety of poses and media. This is the first of a sequence of three classes. Develops, skills in observation and perception. Later, analytic skills are combined with personal expression and invention. A variety of media is used to explore the implications of line and modeled form to explore the figure in compositional environments. The skeleton and muscles will be studied in relationship to the model poses. Prerequisites: (for art and art history majors only) Art 115, Art 131. Open to non-majors with instructor's consent or departmental approval.

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. This course requires that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements). Prerequisites: Art 115, 118, and 120. Open to non-majors who have prerequisites and consent of the instructor.

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 and 119.

***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 ani-

mation. Project planning and workflow are explored in response to technical requirements for presenting the work in multiple media delivery formats. Recommended prerequisites: Art 115 and 119.

**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 and 119.

Art 260

Black and White Photography (4)

Studio introduction to black and white photography using both film-based darkroom and digital imaging techniques, including 35mm camera controls, film processing, enlargement, digital image capture, and basic digital image adjustment. Assignments focus on two dimensional design principles of line, shape, pattern, texture, symmetry, asymmetry, and vantage point, and culminate in a coherent photo story. While learning basic photographic techniques, students discuss form, content, and the aesthetics of photographic image-making. Studio includes lecture, demonstration, critique, and supervised lab work. Students must furnish a focus camera, film or digital, with adjustable f-stops and shutter speeds. Automatic cameras must have manual override.

Art 261

Color Photography (4)

Studio introduction to color photography concentrating on the use of color as an aesthetic tool. Additive and subtractive color theory, color perceptions, and aesthetics are investigated through lecture and shooting assignments. Color materials and alternative color processes are investigated. The use of color by various photographers is examined. Basic 35mm camera controls are mastered, culminating in a portfolio of images. Photographs are output with digital printers. Studio includes lecture, demonstration, critique, and supervised lab work. Students must furnish a focus camera, film or digital, with adjustable f-stops and shutter speeds. Automatic cameras must have manual override. This course requires that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements).

Art 262

Photoimaging I (4)

Studio introduction to concepts, techniques, practices, aesthetics, and ethics of photographic imaging and image-making with digital technology. Investigations in photographic media are enabled through a variety of digital imaging techniques, including 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 digital print-

making. Prerequisites:

Art 261 or Art 260

Art 270

Introduction to Printmaking: Relief(4)

A studio focused course concentrating on the planographic printmaking processes traditionally identified as "relief printmaking". This specialized technique will be presented utilizing the practice and concepts unique to historic, traditional/non-traditional and contemporary printmaking methodology. Monoprinting one of a kind image making and edition printing creating identical multiple images will be explored. Graphic languages developed through researching historical and contemporary influences will be presented to inspire and stimulate the students imagination and knowledge of graphic languages. Sequential thinking processes and theory will also be addressed. May be repeated twice for credit maximum 8 credits. Prerequisites Art 115 and Art 131. Open to non-majors with instructor's or department's consent.

Art 271

Introduction to Printmaking: Etching(4)

A studio focused course concentrating on the Intaglio method of Printmaking also identified as "Etching". This specialized technique will introduce basic theories, practice and concepts unique to historic, traditional/nontraditional and contemporary Printmaking methodology. Monoprinting (one of a kind image making processes) and edition printing sequential image making will be explored. Technical processes of black and white drypoint, etching and softground will be at the core of the students investigation. Understanding manipulation of technical processes unique to etching, additive and subtractive processes will be equally explored. Graphic languages developed through researching historical and contemporary influences will be presented to inspire and stimulate the students imagination and knowledge of graphic languages. Sequential thinking processes and theory will also be addressed. Zinc and copper plates will be the central focus of this introductory course. May be repeated twice for credit. Maximum 8 credits. Prerequisites Art 115 and Art 131. Open to non-majors with instructor's or department's consent.

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. Prerequisites: Art 115, 117 and 131. Open to non-majors with instructor's consent or departmental approval.

Art 287

Introduction to Jewelry and Metalsmithing (4)

A beginning level course in the exploration of materials and processes basic to jewelry and light-metal design and fabrication. This includes high temperature soldering, use of jewelers' saw, files, hammers, small casting, and stone setting. Emphasis on idea development and craftsmanship. This course is the foundation for continued

work of increasing conceptual and technical complexity. Prerequisites: Art 117. Open to non-majors with consent of instructor.

Art 291

Introduction to Sculpture I (4)

The first of a two-term sequence course that provides an introduction to basic materials, processes, and concepts fundamental to sculpture. Students gain command of specific sculptural processes and materials while engaging in concept-generated assignments. Lectures and readings expose students to the work of modern and contemporary sculptors. Introduces methods used in making sculptural forms such as rendering from observation, mold making, wood construction, and assemblage. The use of clay, plaster, wood, and found objects/materials will be covered. In addition to the materials and processes introduced, a mixed-media approach is encouraged in all projects. Students at this level also begin experimentation with a range of alternative materials and process that support current practices in contemporary art. Prerequisites: (required for art and art history majors and recommended for non-majors), Art 117. Open to non-majors with instructor's consent or departmental approval.

Art 292

Introduction to Sculpture II (4)

The second of a two-term sequence course that provides an introduction to basic materials, techniques, and concepts fundamental to making sculpture. Students gain command of specific sculptural processes and materials while engaging in concept-generated assignments. Lectures and readings expose students to basic theory and the work of modern and contemporary sculptors. Builds upon the knowledge learned in Art 291 and continues in introducing fundamental methods in which to make sculptural forms. Students are introduced to oxy-acetylene welding, basic fabrication techniques, and metal shop safety as well as at least two of the following other processes: carving, body casting, fibers, soldering, and/or working with reclaimed materials. In addition to the materials and processes demonstrated, a mixed-media approach is encouraged in all projects. Students at this level also begin experimentation with a range of alternative materials and process that support current practices in contemporary art. Prerequisites: (required for art and art history majors and recommended for non-majors) Art 117. Art 291 recommended for all majors. Open to non-majors with instructor's consent or departmental approval.

***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. Prerequisites: Art 115 and 131. Open to non-majors with instructor's consent or departmental approval.

***Art 295**

Sculpture-The Figure (4)

A studio art course that studies sculptural forms and volumes through observation of the human body. The focus of this course will be a study of the human figure in form and gesture and an exploration of the methods and materials appropriate to that study. Observation and perception,

proportion, analysis of the human skeleton and musculature, and figurative abstraction will be addressed. Prerequisites: Art 117. Maximum 4 credits. Open to non-majors with instructor's consent or departmental approval.

***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. Prerequisites: Art 115, 119 and 131. Studio artists will be given preference. Open to non-majors with instructor's consent or departmental approval.

***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. Prerequisites: Art 115, 131 and 230. Open to non-majors with instructor's consent or departmental approval. 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. This course requires that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements). Prerequisites: Art 200 and 210 and formal acceptance into the third year by Sophomore Portfolio Review. Open to non-majors who have prerequisites and consent of the instructor.

***Art 301**

Processes and Practices of the Creative Industries (4)

This course provides an overview of creative industries, its practices, production, and consumption, and its importance to global knowledge-based economies. Students are introduced to key creative industries theoretical and analytical frameworks and will learn how these frameworks converge and can be applied in creative industries – as well as the importance of multi-disciplinary collaborations to creative industries. Students will gain the foundational vocabulary and skills to critique, present and discuss creative industries ideas and case studies.

***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. This course requires that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements). Prerequisite: Art 210 and formal acceptance into the third year by Sophomore Portfolio Review. Open to non-majors who have prerequisites and consent of the instructor.

Art 312

Art in the Elementary School (4)

This course is designed to give the elementary educator knowledge, skills, methodologies and resources that encourage the incorporation of art education as a regular, ongoing and sequential part of the core curriculum. Based on contemporary theory and practice focused exclusively on the teaching of art at K-5 levels. Required for all students seeking a general multi-subject teaching license at the elementary level. General objectives include establishing a theoretical and methodological foundation that enables the student to teach age appropriate art lessons that engage children not only in art production activities but also to address the areas of art history, criticism and aesthetics. Open to Non-majors. Maximum 4 credits.

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. Prerequisite: Art 225 and formal acceptance into the third year by Sophomore Portfolio Review. Open to non-majors who have prerequisites and consent of the instructor. 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. Prerequisite: Art 320. These courses require that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements). Open to non-majors who have prerequisites and consent of the instructor.

Art 327

Intermediate Art and Social Practices (4)

For this class students will choose a dept on campus that is not the art dept and will make arrangements to become "artists in residence" for that dept during the quarter. The students will keep journals documenting information presented in the class, personal project ideas, etc. They will work with professors, students, and administrators in their selected depts. to create projects that respond to the qualities, needs and interests of that dept and those people found there. The class will go on tours of the various depts. and learn about them from the students who have selected them and the people they are working with in those depts. The professor will meet independently with the students in their selected depts. and the class will meet together to discuss their indi-

vidual progress on the projects that they are working on. The students will be asked to produce several small projects and a larger final project that is done in conjunction with their selected dept. Students will document their process and projects, and will be graded on engagement in class and with their depts. journals and projects. Recommended prerequisites: Art 227.

Recommended that it be taken in sequence. Open to non-majors.

Art 330

Critical Theories in Art I (4)

After a brief look at art of the 1960s and 1970s, this class will explore major theoretical and philosophical developments in the art world over the last quarter-century. Various themes and forms of art and individual artists will be examined as manifestations of specific theories and philosophies that have emerged during the past 25 years. Particular emphasis will be on art of the post-9/11 era. Material will be covered through readings, slide lectures and films as well as frequent visits to the Portland Art Museum; we will also take advantage of gallery shows, lectures and other relevant local events. Assignments will include critical response and research papers, group presentations. Prerequisites: Art 182 and ArH 206. Maximum 4 credits. Open to non-majors with instructor's consent or departmental approval.

Art 341

Interactive Media I (4)

Interactive design for the Web focusing on principles of information architecture, navigation systems, and visual interface. HTML / CSS markup and the use of visual design tools. Creation and optimization of graphics in compressed formats. Introduction to Web production work-flow through development of site projects and a personal portfolio. Topics include usability and the aesthetics of web media. This course requires that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements). Prerequisites: Formal acceptance into the third year by Sophomore Portfolio Review. Open to non-majors who have prerequisites and consent of the instructor.

Art 342

Interactive Media II (4)

Interactive design that expands on principles of information architecture, navigation systems, and visual interface through the exploration of advanced design and development techniques. Advanced Web production work-flow will be explored through development of site projects. Critical analysis of work in the field establishes vocabulary and principles for effective design, usability, and interactivity. Technical standards for cross-browser design, client-side scripting, advanced HTML / CSS and basic frame-based web animation. This course requires that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements). Prerequisites: Art 341. Open to non-majors who have prerequisites and consent of the instructor.

Art 345

Introduction to Motion Graphics for Designers (4)

A beginning level course in the exploration of materials and processes basic to jewelry and light-metal design and fabrication. This includes high temperature soldering, use of jewelers' saw, files, hammers, small casting, and stone setting.

Emphasis on idea development and craftsmanship. This course is the foundation for continued work of increasing conceptual and technical complexity. Prerequisites: Art 117. Open to non-majors with consent of instructor.

Art 350
Life Drawing II (4)

This is the second class in the Life Drawing sequence. The course continues development of skills in drawing the human figure in a variety of poses working with a variety of materials with an emphasis on the muscular system. Prerequisite: Art 131, Art 250 or have equivalent experience drawing from a live model. The student should be able to state the figure quickly, economically and in proportion. Prerequisites: Art 182 and Art 250. Maximum 4 credits. Open to non-majors with instructor's consent or departmental approval.

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. This course requires that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements). Prerequisites: Art 200 and 254 and formal acceptance into the third year by Sophomore Portfolio Review. Open to non-majors who have prerequisites and consent of the instructor.

Art 356
Visual Storytelling (4)

Studio course exploring strategies of representation of stories, characters, and other narrative elements in time-based visual media. Focuses on the use and creation of storyboards, graphic novels, and animation in fiction and non-fiction storytelling. Prerequisites: Art 119 for majors or with permission of the instructor

Art 357
Intermediate Video (4)

Studio course covering intermediate video production skills such as audio recording and sound editing, image compositing, and other relevant technical topics. Includes the study of current trends and theories in video art and experimental media to inform individual creative projects. Prerequisites: Art 119 and Art 257 for majors or permission of instructor

***Art 360**
Photographic Exploration I (4)

Study of photography as visual language. Lectures, demonstrations, and extended assignments explore technical, aesthetic, and ethical issues of contemporary photographic communication. Working in either a documentary or conceptual approach, students begin development of their photographic portfolios, with emphasis placed on the photographic series. Prerequisites: Art 260, 261, 262, and Arh 392.

***Art 365**
Digital Portfolios for Visual Artists (4)

Studio course for visual artists focusing on design and development of digital portfolios. Concepts of portfolio development, graphic design, and

interactive design are applied to create an effective communication of the artist's body of work. Digital production techniques are practiced as portfolios are assembled and published in a variety of print, time-based, and interactive formats.

***Art 367**
Design Business Practices (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. Prerequisites: for Non-art majors, Art 100, 120, 200, 224, and ARH 290. For Art majors, Art 225 and 254 and Art 200 & 210. May be taken twice for credit. Maximum 8 credits. Open to non-majors with instructor's consent.

Art 370
Topics in Printmaking Techniques (4)

Adding on to the principles and skill sets first investigated in lower-level printmaking this course explores additional techniques in printmaking. Varying practices, methodologies, and theories will be explored. Topics include but are not limited to etching, relief, mixed media print, screen printing, and mono-print. May be repeated for credit up to a maximum of 12 credits. Prerequisites: Art 270 or 271. Open to non-majors with instructor's consent or departmental approval.

Art 371
**Intermediate Printmaking:
Thematic Process (40)**

This course further investigates and explores the theory, practice and contemporary/ historical issues unique to printmaking. At an intermediate level this course is intended to guide and help students make connections between content, process, and context of their creative works. Students will thematically direct the content of their works while making the necessary connections surrounding methods and application of their ideas toward the processes unique to printmaking. Prerequisites: Two of the following Art 270, 271 or 370.

Art 373
Intermediate Sculpture I: Contemporary Approaches (4)

The first of a two-term sequence that focuses on contemporary sculptural practices. Through assignments that emphasize conceptual development and critical thinking, students are introduced to topics such as appropriation, time-based art, kinetics, interactivity, collaboration, and performance. The expanded field of sculpture is explored as potential materials extend into light, sound, motion, and the environment. Students begin to develop their own personal voice while developing the vocabulary by which to discuss ones own work and others. Students will work in a variety of media while continuing to utilize and build upon the technical and conceptual knowledge they acquired in lower-division sculpture courses. Prerequisites: Art 291 or Art 292. Open to non-majors with instructor's consent.

Art 374
Intermediate Sculpture II: Space, Site, and Intervention (4)

The second of a two-term course that focuses on contemporary sculptural practices. Course explores current sculptural investigations of a space and site. Students are exposed to the contemporary practices of installation, site-specific art, and sculptural intervention. Through assignments that emphasize conceptual development and critical thinking, students will create artworks that explore the historical, social, contextual, and spatial elements of specific spaces and sites. There will be continued development of one's personal voice and a further refining of the necessary vocabulary in which to discuss their work as well as other's work. Students will work in a variety of media while continuing to utilize and build upon the technical and conceptual knowledge acquired in lower-division sculpture courses. Prerequisites: Art 291 or Art 292. Open to non-majors with instructor's consent.

Art 375
Mold Making and Casting (4)

Exploration of the primary tools, materials, and processes used in mold making technology as it relates to contemporary sculptural practice. An overview of various methods of both rigid and flexible mold making will be explored as well as both solid and hollow shell casting techniques and materials. There will be an emphasis on studio etiquette, craftsmanship and production as well as creative applications of mold making and casting. The conceptual possibilities of the multiple will be explored. Students will also be exposed to contemporary artists who utilize mold making as a central part of their practice. Course builds upon the basic mold making introduced in lower division sculpture courses. Prerequisites: (required for art and art history majors and recommended for non-majors), Art 291 or Art 292. Open to non-majors with instructor's consent or departmental approval.

Art 387
Intermediate Jewelry and Metalsmithing (4)

Advanced metalworking techniques (e.g., forming methods) are introduced along with continued development of basic processes. Typical projects include designing and fabricating a series of three theme-related objects. Can include cast elements and incorporation of non-metal materials. Prerequisites: Art 117, Art 287. Open to non-majors with instructor's consent.

Art 388
Welding and Fabrication (4)

An upper-division sculpture course with a technical and material focus on welding and fabrication with steel. A variety of welding and fabrication processes are explored. Builds on skills developed in lower division courses and expands sculptural thinking, refines personal visual language, advances the development of ideas, and builds technical skills. Experimental materials, methods, and concepts are explored and encouraged. Research and presentations of living sculptors offer perspective and context for contemporary issues and discussions which investigate those issues. Prerequisites: (required for art and art history majors and recommended for non-majors), Art 292. Art 291 recommended for all majors. Open to non-majors with instructor's consent or departmental approval.

Art 389**Metal Casting (4)**

An upper level sculpture course that explores Bronze and Aluminum casting using the lost wax method. Builds on mold making and casting skills developed in lower-division sculpture courses. Students will expand their sculptural thinking, refine their personal visual language, and advance the development of their ideas. They will develop skills in lost wax casting as well as explore experimental materials, methods and concepts of casting in the context of contemporary sculpture. Research and presentations of living sculptors expand on this perspective and help create context for contemporary issues and in class discussions which investigate those issues. Prerequisites: (required for art and art history majors and recommended for non-majors), Art 292. Art 291 recommended for all majors. Open to non-majors with instructor's consent or departmental approval.

Art 391**Drawing Concepts II (4)**

Engages the theories and practices involved in the many processes, methods, and techniques of drawing. Readings, discussions, and research are expected. Prerequisites: Art 182 and Art 230. Art 206 strongly recommended. Open to non-majors with instructor's consent.

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. Prerequisites: Art 182, Art 230, Art 281 and Art 282. Open to non-majors with instructor's consent.

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 School of Art and Design required.

Art 402/502**Independent Study (Credit to be arranged.)**

Terms, section, instructor and hours to be arranged. Consent of instructor and chair of the School of Art and Design required.

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 School of Art and Design 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 School of Art and Design required.

Art 406/506**Projects (Credit to be arranged.)**

Terms, section, instructor and hours to be arranged. Consent of instructor and chair of the School of Art and Design required.

Art 407/507**Seminar (Credit to be arranged.)**

Terms, section, instructor, and hours to be arranged. Consent of instructor and chair of School of Art and Design required.

Art 408/508**Workshop (Credit to be Arranged.)**

Terms, section, instructor and hours to be arranged. Consent of instructor and chair of the School of Art and Design required.

Art 410/510**Selected Topics (Credit to be arranged.)**

Maximum: 12 credits in one area. Prerequisite: consent of instructor and chair of School of Art and Design.

Art 427**Advanced Art and Social Practices (4)**

For this class the students will work outside of the PSU campus. The class will select a particular area of Portland, for example Old Town or NE Alberta Ave. or a specific institution like a high school or senior center. The students will then become artists-in-residence in that area or institution. The students will keep journals documenting information presented in the class, personal project ideas, etc. The students will research the area both from first hand interviews with locals, and from historical documents and current day written materials. The students will produce a series of site-specific project that collaborate with in some way the people local to the selected site. Documentation and presentations of each project will be required. General class engagement and journal writing will form the basis for grades. Prerequisites: Art 227 or Art 327 or consent of instructor. Open to non-majors.

Art 430**Critical Art Theories II (4)**

Artwork and artists of the 21st century are examined with in the context of contemporary art theory. A thematic rather than a chronological approach will be used when examining theoretical, philosophical and socio-cultural aspects. Material will be presented through in-class instruction and field trips. Prerequisite: Art 330 and non-majors must have departmental or instructor's consent.

†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.

† 500-level classes intended for M.F.A. students only.

Art 440/540**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, tested, and maintained on web servers. Team-based design and development process is coordinated through project management practices. Emphasis is placed on strategic and tac-

tical design process, industry standards, usability studies, business proposals, design documents, and other professional practices. This course requires that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements). Prerequisites: Art 341, 342.

Art 450*Life Drawing III (4)**

The third course in the life drawing sequence. If students have had the preparation of prior classes in learning to draw the figure accurately from observation and have learned a little about basic anatomy then they will continue to develop skills in drawing the human figure in a variety of poses with the addition of compositions dealing with two or more figures when possible. Emphasis on compositional and expressive means Use of variety of materials. Prerequisites (required for art and art history majors): Art 350. Recommended that it be taken in sequence. Open to non-majors with instructor's consent.

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. Prerequisites: Take at least two of the following, Art 255, 256, or 257.

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. This course requires that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements). Prerequisite: senior standing, completion of at least one upper-division digital media elective, and permission of instructor.

Art 461/561*Photographic Exploration II (4)**

Continuation of Art 360 Photographic Exploration I, culminating in the completion and presentation of a final photographic portfolio. Multiple portfolio formats are possible. Graduate students also complete original research or critical study on either a photographer or photographic technique. Prerequisite: Art 360.

Art 462/562*Professional Practices in Photography (4)**

Introduces senior and graduate students to the photography profession in its diverse forms and the commercial operation of photographic studios. Projects investigate one or more specialized forms of photographic practice, such as product, architectural, portrait, landscape, photo-illustration, or immersive photography. Specialized techniques in lighting and digital imaging may be explored. Prerequisite: Art 360.

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. This course requires that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements). 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. This course requires that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements). Prerequisites: Art 321, 354.

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. This course requires that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements). 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. This course requires that students furnish a laptop computer that meets the departmental standards in terms of hardware and software (see departmental website for requirements). Prerequisites: senior status in the major and Art 321, 341, 354, 470.

Art 479

Advanced Printmaking – Atelier Print (4)

An advanced laboratory course for student's specializing in printmaking. The intention of this

course is to explore and experiment with several print techniques to arrive at a cohesive body of printed work that speaks to an individual vision. Prerequisites: two terms of Art 370 and/or Art 371 or both. Maximum 12 credits. Open to non-majors who have prerequisites and instructor's consent.

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 487

Advanced Jewelry and Metalsmithing (4)

An upper-level light metals course with focus on conceptual development and increasingly specific technical methodology. Builds on skills developed in lower-division courses and refines personal visual language and progression of ideas. Experimental materials and methods are encouraged. Prerequisites: Art 117, Art 287. Open to non-majors with instructor's consent

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. Prerequisites (for art and art history majors only): Art 392, 393 and Art 391. Open to non-majors who have prerequisites and consent of the instructor.

Art 492/592

Contemporary Studio Practice (4)

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. Maximum: 8 credits. Prerequisites: Admission to the BFA program.

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. Prerequisites: Art 391. Maximum 8 credits. Open to non-majors who have prerequisites and consent of the instructor.

Art 494/594

Advanced Sculpture I (4)

The first of a two-term course sequence that continues an exploration of contemporary sculptural practices. Building upon the knowledge acquired

in intermediate and introductory sculpture courses, there is an emphasis on conceptual development, research, and production as an advanced level sculpture student. Through readings, research projects and critique, students will further develop the ability to discuss their own work as well as others both verbally and in writing. Under closely guided assistance, students will begin the process of developing an independent, cohesive body of work within a historical and theoretical context. Courses must be taken in sequence. Prerequisites: Two of the following: Art 373, Art 374, Art 375, Art 388 or Art 389. Open to non-majors with instructor's consent.

Art 495/595

Advanced Sculpture II (4)

The second of a two-term course sequence that continues an exploration of contemporary sculptural practices. Building upon the knowledge acquired in intermediate and introductory sculpture courses, there is an emphasis on conceptual development, research, and production as an advanced level sculpture student. Through readings, research projects and critique, students will further develop the ability to discuss their own work as well as others both verbally and in writing. Building upon the knowledge acquired in Art 494/594, students will complete a cohesive, independent body of work within a historical and theoretical context. Courses must be taken in sequence. Prerequisites: Art 494 or Art 594. Open to non-majors with instructor's consent.

Art 497/597

A History of Art and Social Practice (4)

A history of social practice in art. Investigate the current critiques, debates and issues surrounding its current state in relation to its historical context. The course will examine social practice from 1920 to present and touch on the key movements. Will place a strong emphasis on contemporary examples of social practice art through readings, assignments, and online participation. This course will give a historic and critical context for social art. Open to non-majors. Prerequisites: at least junior standing or graduate standing.

Art 498

BFA Thesis Exhibition (2)

This is a tutorial and directed study in studio production with assigned supervising faculty members. Preparation and production of a cohesive body of work culminating in an end of the program BFA thesis exhibition. In-depth discussions and assessment of student's studio work in relation to subject matter, materials, content, presentation, contemporary art practices and criticism, technical and formal concerns and/or related interdisciplinary interests. This course should be taken in the last quarter of the BFA Program before graduation. Directed assignments and course of study will be given as appropriate. An oral defense of the final project will take place at the time of the final exhibition. Required for all BFA students. Prerequisites: Acceptance into the BFA program and Senior Standing.

Art 503

Thesis (Credit to be arranged.)

Art 514, 515

Art Methods for Secondary School

Teachers (4,4)

Methods and materials for teaching and coordination of art programs in grades 5-12, with an emphasis on organizing historical, aesthetic, critical and studio demonstrations, lectures, and classroom/model presentations. Translating theory into

practice will be a continuing and ongoing focus of the classes in lessons, research and readings.

Students will develop Art lessons and programs that reflect current state and national standards. Art 514 is an introduction to the history of Art Education, the methods of instruction, philosophy of art education, and organization of art materials and tools. Art 515 explores the current best practices and issues in Art Education, technology (media-computer) application to art, continuing research/issues in art education, Practical and contemporary issues in public/private education. Prerequisite: ART 514 Admission into the Art Education GTEP program. Prerequisite: ART 515 Admission into the Art Education GTEP program and ART 514. Open to non-majors with instructor's consent.

†**Art 530**
Critical Art Theories II (4)

Artwork and artists of the 21st century are examined with in the context of contemporary art theory. A thematic rather than a chronological approach will be used when examining theoretical, philosophical and socio-cultural aspects. Material will be presented through in-class instruction and field trips. Prerequisite: Graduate standing in the MFA program.

† 500-level classes intended for M.F.A. students only.

†**Art 578**
Studio Practice: Workshop (2)

This course is a co-requisite to Art 580 Studio Practice: Directed Studies. In this workshop the focus will be on group dialogue and peer critique of individual and collaborative work with an emphasis on the relationship between research, production and presentation. In addition to requiring that students experiment with new methods, materials and modes of research in regard to their studio work, ART 578 develops students' ability to assess the strength of developing work, enhances their ability to speak about their work and the work of their peers and gives them a wider view into issues and aspects of studio production. Includes reading assignments, student-led discussion, guest speakers and field trips. May be repeated for credit. Maximum credits 24. Required for MFA. Prerequisites: graduate standing.

† 500-level classes intended for M.F.A. students only.

†**Art 580**
Studio Practice: Directed Studies (2)

Tutorial and directed study in studio production with a supervising faculty member. In-depth discussions and assessment of graduate student's studio work-in-progress in relation to contemporary art practices and criticism, historical practices, technical and formal concerns and/or related interdisciplinary interests. Directed assignments and course of study will be given as appropriate. May be repeated for credit. Maximum credits 40. Required for MFA. Prerequisite: graduate standing.

† 500-level classes intended for M.F.A. students only.

†**Art 581**
MFA Graduate Seminar I: Special Topics in Contemporary Art (2)

Examines selected issues in contemporary art and culture. The given instructor's current research interests determine course material. Examples of topics include: post-colonialism and Diaspora; issues in feminism; gender and queer studies; modernisms and modernity; new technologies and digital culture; autobiography and memoir; cultural production and censorship; globalism and new economies of art. Course format consists of assigned readings, discussion and a writing component. Field trips, student presentations, screenings and assigned lectures may also be included. May be repeated for credit. Maximum credits 4. Required for MFA. Prerequisite: graduate standing.

† 500-level classes intended for M.F.A. students only.

†**Art 582**
MFA Graduate Seminar II: Writing and Research (2)

Explores the role of writing and research in contemporary art practice. Course materials include library research and developing bibliographies relevant to students' studio practice, discussion of methodologies and practices of contemporary art production. Preparatory course for written component of the MFA exhibition project: second-year students are expected to develop an abstract and outline for their exhibition project. May be repeated for credit. Maximum credits 4. Required for MFA. Prerequisite: graduate standing.

† 500-level classes intended for M.F.A. students only.

†**Art 583**
MFA Graduate Seminar III: Teaching Visual Culture (2)

Explores teaching at local and national institutions as preparation for teaching in higher ed. This seminar includes curriculum development, syllabi development, assessment, educational objectives reading and discussion of post-modern theory and other matters in the area of art education and visual culture. Required for MFA. Maximum credits 2. Prerequisite: graduate standing. Letter grade.

† 500-level classes intended for M.F.A. students only.

†**Art 584**
Social Practice: Directed Studies (2)

Tutorial and directed study in social practice production with a supervising faculty member. In-depth discussions and assessment of graduate student's work-in-progress in relation to contemporary art practices and criticism, historical practices, technical and formal concerns and/or related interdisciplinary interests. Directed assignments and course of study will be given as appropriate. May be repeated for credit. Maximum credits 20. Required for MFA. Prerequisite: graduate standing.

† 500-level classes intended for M.F.A. students only.

†**Art 585**
MFA Graduate Seminar IV: Professional Practices (2)

Explores practical issues of career development for professional artists including preparing a portfolio, grant writing, C.V. writing, applying for teaching positions and residencies, working with museums and galleries, working in and with public, nonprofit and community arts organizations. The course includes guest speakers and individual research projects. Required for MFA. Prerequisite: graduate standing in MFA.

†**Art 586**
Visiting Artist Program / Group Critique (2)

A critique-based course focusing on the studio production of the individuals enrolled. Students are expected to help foster and develop an environment for serious and sophisticated peer review. The work of visiting artists will be presented. Visiting artists participate in group critiques, as well as conduct individual studio critiques. May be repeated for credit. Maximum credits 12. Required for MFA. Prerequisite: graduate standing.

†**Art 587**
MFA Exhibition Project (4)

Tutorials and directed study in developing a final MFA exhibition project. Conduct supporting research and studio production with approval of the students' individual MFA advisor, Exhibition committee chair and committee members. Required for MFA. Maximum credits 4. Prerequisite: graduate standing.

† 500-level classes intended for M.F.A. students only.

†**Art 598**
Social Practice: Workshop (2)

This course is a co-requisite to Art 584 Social Practice: Directed Studies. In this workshop the focus will be on the creative aspects involved in social practice rather than theory. Formulate and work on collaborative public projects, discuss the creative aspect and practical application of art and social practice. May be repeated for credit. Maximum credits 20. Required for MFA. Prerequisite: graduate standing.

† 500-level classes intended for M.F.A. students only.

†**Art 599**
MFA Exhibition Critique (2)

Public presentation of MFA exhibition project and MFA exhibition lecture; production of written MFA exhibition statement with the student's individual MFA advisor, graduate faculty and graduate program coordinator. Maximum credits 2. Required for MFA. Prerequisite: graduate standing.

† 500-level classes intended for M.F.A. students only.

School of Music

231 Lincoln Hall
503-725-3011
www.pdx.edu/music

B.A., B.S.—Music
Minor in Music, Minor in Jazz Studies,
and Minor in Music History
B.M.—Performance, Voice, Jazz Studies,
Music Education, and Composition
M.A., M.S.—Music
M.M.—Performance, Conducting,
and Jazz Studies

Mission statement

The School of Music exists to provide an excellent forum for the professional training and support of a highly diverse student body in the areas of performance, conducting, jazz studies, music education, and composition. In addition, the School provides general training in music where students study theory, history, literature, pedagogy, composition, improvisation, music technology, and ethnomusicology. Framed by the University's motto, "*Let Knowledge Serve the City*" the School of Music offers a wide spectrum of activities by students, faculty, and guest artists which enhances the artistic and cultural life of the city of Portland.

Undergraduate programs

The School 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, Portland Jazz Orchestra, 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 School 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,

brass, percussion, piano, jazz, 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. Graduates have consistently demonstrated their excellence in the fields of performance, conducting, composition, and scholarship. Many are leaders in music around the Northwest and elsewhere.

Programs in the School of Music are accredited by the National Association of Schools of Music. The School also offers many courses for the non-major, including: Beginning Guitar, Beginning Piano, Beginning Voice, Introduction to Music, Survey of Music Literature, Applied Music, University Chorus, Women's Chorus, University Band, PSU Orchestra, Basic Materials of Music, Music Theory I, Music in the Western World, History of Rock, Jazz History, Guitar History, World Music, Improvisation, and American Musical Traditions.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Music's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admissions requirement

Admission to the department is based on general admission to the University. (See "Admission requirements" on page 33 for more information.) Additionally, the School of Music requires students to apply to the School and audition before they are accepted into the music program.

Degree requirements

All courses used to satisfy the School of Music major and minor requirements, whether taken in the School or elsewhere, must be graded C or above. In all degrees where upper division applied music is required, students must pass the mandatory upper division examination. Admission to the BM in Music Education program or the BM in Composition program is contingent on a mandatory portfolio review.

Requirements for Bachelor of Arts and Bachelor of Science in Music. In addition to meeting the general university degree requirements, students seeking the B.A. or B.S. in Music must complete the following courses:

	Credits
†MuP 190, 290, 390, 490 Applied Music.....	12
(a minimum of 6 upper-division credits is required)	
Mus 046 Piano Proficiency Exam.....(no credit)	
‡Mus 047 Final Project or	
Mus 048 Junior Recital	(no credit)
Mus 111, 112, 113 Music Theory I	9
Mus 114, 115, 116 Sight-Singing/Ear Training.....	3
(concurrent enrollment with Mus 111, 112, 113 required)	
*Mus 188 Performance Attendance	(no credit)
†Mus 195, 196, 197, or 198 Band, Orchestra, Choir, or Jazz Lab Band	6
Mus 205, 206 Listening I, II	2
Mus 211, 212, 213 Music Theory II	9
Mus 214, 215, 216 Sight Singing/Ear Training	3
(concurrent enrollment with Mus 211, 212, 213 required)	
Mus 304, 305, 306 Music History.....	12
Mus 351 Accompanying (required of piano majors in lieu of 2 credits of Mus 395, Mus 396, Mus 397 or Mus 398)	(2)
†Mus 395, 396, 397, or 398 Band, Orchestra, Choir, or Jazz Lab Band	6
One of the following:	4
Mus 355 Jazz History	
Mus 374, 375 World Music	
Mus 376 American Music Traditions	
Mus 411 Topics in Music History	2
Music Electives (chosen in consultation with advisor).....	8
Total	76

*Mus 188 must be taken concurrently with Applied Music each term through the completion of MUP 390 for a total of 9 terms.

†Music majors must enroll in Applied Music and the related Large Ensemble each term. A minimum of 6 of the 12 credits must be completed at the upper-division level. A minimum of 6 of the 12 Large Ensemble credits must be completed at the upper-division level.

‡All Bachelor of Arts degree candidates must complete a final project consisting of one of the following:

1. A half recital Mus 048 (30 minutes);
2. A performance project (Mus 047);
3. Regular performance on area recitals (Mus 047).

Requirements for Bachelor of Music in Performance. 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
†MuP 190, 290, 390, 490 Applied Music (6 credits of 390 and 6 credits of 490).....	24
Mus 046 Piano Proficiency Exam (BM section).....(no credit)	
Mus 048 Junior Recital	(no credit)
Mus 049 Senior Recital	(no credit)
Mus 111, 112, 113 Music Theory I.....	9
Mus 114, 115, 116 Sight-Singing/Ear Training.....	3
(concurrent enrollment with Mus 111, 112, 113 required)	
*Mus 188 Performance Attendance	(no credit)
‡Mus 194, 394 Chamber Music (minimum of 3 upper-division credits required)....	6
†Mus 195, 196, or 197 Band, Orchestra, or Choir..	6
Mus 205, 206 Listening I, II	2
Mus 211, 212, 213 Music Theory II.....	9
Mus 214, 215, 216 Sight Singing and Ear Training	3
(concurrent enrollment with Mus 211, 212, 213 required)	

Mus 291, 292, 293 Advanced Class Piano.....	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
Mus 351 Accompanying (required of piano majors only in lieu of 2 credits of Mus 395, Mus 396, or Mus 397).....	(2)
One of the following:.....	4
Mus 355 Jazz History	
Mus 374, 375 World Music	
Mus 376 American Music Traditions	
†Mus 395, 396 or 397 Band, Orchestra or Choir.....	6
Mus 411 Topics in Music History.....	2
Mus 481 Pedagogy.....	3
Music Electives (chosen in consultation with advisor).....	17
Total	123

*Mus 188 must be taken concurrently with Applied Music for a total of 9 terms.
 †Music majors must enroll in Applied Music and the related Large Ensemble each term.
 ‡Music majors must enroll in the related Chamber Music Ensemble.

Requirements for the Bachelor of Music in Performance with an Emphasis in Voice. In addition to meeting the general University degree requirements, music majors seeking the professional music degree (Bachelor of Music in Performance with an Emphasis in Voice) must complete the following courses:

Area Coordinator: C. Meadows

	Credits
†MuP 190, 290, 390, 490 Applied Music.....	24 (6 credits of 390 and 6 credits of 490)
Mus 046 Piano Proficiency Exam.....	(no credit)
Mus 048 Junior Recital.....	(no credit)
Mus 049 Senior Recital.....	(no credit)
Mus 111, 112, 113 Music Theory I.....	9
Mus 114, 115, 116 Sight-singing/Ear Training.....	3 (concurrent enrollment with Mus 111, 112, 113 required)
*Mus 188 Performance Attendance.....	(no credit)
‡Mus 197/397 Chorus.....	12 (minimum of 6 credits at the 397 level)
Mus 205, 206 Listening I, II.....	2
Mus 211, 212, 213 Music Theory II.....	9
Mus 214, 215, 216 Sight Singing and Ear Training.....	3 (concurrent enrollment with Mus 211, 212, 213 required)
Mus 291, 292, 293 Advanced Class Piano.....	6
Mus 304, 305, 306 Music History.....	12
Mus 312 Orchestration.....	3
Mus 320 Fundamentals of Conducting.....	2
One of the following:.....	4
Mus 355 Jazz History	
Mus 374, 375 World Music	
Mus 376 American Traditions	
Mus 411 Topics in Music History.....	2
Mus 427 Opera Workshop.....	2
Mus 428 Opera Production.....	2
One of the following:.....	3
Mus 430 Song Literature	
Mus 436 Opera Literature	
Mus 481 Vocal Pedagogy.....	3
Mus 485, 486, 487 Diction for Singers.....	6
Two of the following.....	4-8
IT 103 Italian	
Fr 103 French	
Ger 103 German	
Music Electives (chosen in consultation with advisor).....	8-12
Total:	123

*Mus 188 must be taken concurrently with Applied

Music for a total of 9 terms. Students attend eight Noon Concerts each term.
 †Music majors must enroll in Applied Music and the related Large Ensemble each term.

Requirements for Bachelor of Music in Composition. 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:

Area Coordinator: B. Miksch

	Credits
†MuP 190, 290 Applied Music (performance).....	12
MuP 390, 490 Applied Music (composition).....	12
Mus 046 Piano Proficiency Exam.....	(no credit)
Mus 048 Junior Recital.....	(no credit)
Mus 049 Senior Recital.....	(no credit)
Mus 111, 112, 113 Music Theory I.....	9
Mus 114, 115, 116 Sight Singing/Ear Training.....	3 (concurrent enrollment with Mus 111, 112, 113 required)
*Mus 188 Performance Attendance.....	(no credit)
†Mus 195, 196, 197, or 198: Band, Orchestra, Choir, or Jazz Lab Band.....	6
Mus 205, 206 Listening I, II.....	2
Mus 211, 212, 213 Music Theory II.....	9
Mus 214, 215, 216 Sight Singing/Ear Training.....	3 (concurrent enrollment with Mus 211, 212, 213 required)
Mus 240, 241, 242 Music Composition I.....	6
Mus 291, 292, 293 Advanced Class Piano.....	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
One of the following:.....	4
Mus 355 Jazz History	
Mus 374, 375 World Music	
Mus 376 American Music Traditions	
†Mus 394, 395, 396, 397, or 398 Chamber Music, Band, Orchestra, Choir, or Jazz Band.....	3
Mus 411 Topics in Music History.....	2
Mus 421 Analysis of Contemporary Music.....	3
Mus 474 or 475 MIDI Applications.....	2
Mus 476 Computer Music Composition.....	3
Music Electives (chosen in consultation with advisor).....	15
Total	123

*Mus 188 must be taken concurrently with Applied Music for a total of 9 terms.
 †Music majors must enroll in Applied Music and the related Large Ensemble each term.

NOTE: Applied Music performance (instrumental or vocal) through Mus 290 with 12 accumulated credits is required. Interested students will submit a portfolio of compositions for acceptance as a Composition Major after the Mus 240, 241, 242 sequence. Transfer students may be admitted on the basis of their portfolio of compositions and their transcript.

Requirements for Bachelor of Music in Jazz Studies. In addition to meeting the general University degree requirements, music majors seeking the professional music degree (Bachelor of Music in Jazz Studies) must complete the following courses:

Area Coordinator: G. Colligan

	Credits
†MuP 190, 290, 390, 490 Applied Music (6 credits of 390 and 6 credits of 490).....	24
Mus 046 Piano Proficiency Exam (jazz section).....	(no credit)
Mus 048 Junior Recital.....	(no credit)
Mus 049 Senior Recital.....	(no credit)
Mus 111, 112, 113 Music Theory I.....	9

Mus 114, 115, 116 Sight-Singing/Ear Training..... 3
(concurrent enrollment with Mus 111, 112, 113 required)

*Mus 188 Performance Attendance.....	(no credit)
†Mus 198 Jazz Lab Band.....	6
Mus 205, 206 Listening I, II.....	2
Mus 211, 212, 213 Music Theory II (jazz section).....	9
Mus 214, 215, 216 Sight Singing and Ear Training (jazz section).....	3 (concurrent enrollment with Mus 211, 212, 213 required)
Mus 271, 272, 273 Jazz Improvisation.....	6
Mus 291, 292, 293 Advanced Class Piano (jazz section).....	6
Mus 304, 305, 306 Music History.....	12
Mus 320 Fundamentals of Conducting.....	2
Mus 355 Jazz History.....	4
Mus 394 Chamber Music Jazz Combos.....	6
†Mus 398 Jazz Lab Band.....	6
Mus 411 Topics in Music History.....	2
Mus 424, 425, 426 Instrumental Jazz Arranging.....	6
Mus 471, 472, 473 Advanced Jazz Improvisation.....	6
Mus 474 MIDI Applications.....	2
Music Electives (chosen in consultation with advisor).....	9
Total	123

*Mus 188 must be taken concurrently with Applied Music for a total of 9 terms.
 †Music majors must enroll in Applied Music and the related Large Ensemble each term.

Requirements for Bachelor of Music in Music Education. In addition to meeting the general University degree requirements, music majors seeking the professional music degree (Bachelor of Music in Music Education) must complete the following courses:

Area Coordinator: D. Glaze

	Credits
†MuP 190, 290, 390 & 490 Applied Music (a minimum of 6 upper-division credits is required).....	12
Mus 046 Piano Proficiency Exam.....	(no credit)
Mus 047 Final Project or 048 Junior Recital.....	(no credit)
Mus 111, 112 & 113 Music Theory I.....	9
Mus 114, 115 & 116 Sight-Singing/Ear Training.....	3 (concurrent enrollment with Mus 111, 112, 113 required)
*Mus 188 Performance Attendance.....	(no credit)
†Mus 195, 196, 197 or 198: Band, Orchestra, Choir or Jazz Lab Band.....	6
Mus 205, 206 Listening I, II.....	2
Mus 211, 212 & 213 Music Theory II.....	9
Mus 214, 215 & 216 Sight Singing and Ear Training.....	3 (concurrent enrollment with Mus 211, 212, 213 required)
Mus 291, 292, 293 Advanced Class Piano.....	6
Mus 304, 305 & 306 Music History.....	12
Mus 312 Orchestration.....	3
Mus 320, 321, 322 Fundamental, Instrumental, Choral Conducting.....	6
MuEd 328 Introduction to Music Education.....	2
MuEd 332, 333, 334 & 335 Strings, Guitar, Vocal, and Percussion Techniques.....	4
One of the following:.....	4
Mus 355 Jazz History	
Mus 374, 375 World Music	
Mus 376 American Music Traditions	
†Mus 395, 396, 397 or 398: Band, Orchestra, Choir, or Jazz Lab Band.....	6
Mus 409 Practicum.....	2
Mus 411 Topics in Music History.....	2
Mus 474 Midi Applications.....	2
MuEd 484 Music with Children.....	3

Additionally, students need to choose a teaching sub-specialty and complete the following courses in the appropriate track

Instrumental Track	Credits
Mus 197 & 397 University Choir.....	2
Mus 409 Marching Band Prac.....	1
MuEd 336 Flute/Double Reeds.....	1
MuEd 337 Clarinet/Sax.....	1
MuEd 338 High Brass.....	1
MuEd 339 Low Brass.....	1
MuEd 341 Jazz Techniques.....	1
MuEd 422/423 Instrumental Literature & Rehearsal Techniques.....	6
Music Electives (chosen in consultation with advisor).....	13
Choral/General Track	Credits
Mus 397 Conductor's Chorus.....	1
MuEd 480, 481 or 482 Kodály Training.....	5
MuEd 340 Wind Instrument Techniques.....	3
MuEd 420/421 Choral Literature & Rehearsal Techniques.....	6
Music Electives (chse in consultation with advisor).....	12
Total	123

* Mus 188 must be taken concurrently with Applied Music for a total of 9 terms. Students attend eight Noon Concerts each term.

† Music majors must enroll in Applied Music and the related Large Ensemble each term.

Requirements for Minor in Music. To earn a Minor in Music, a student must complete 35 advisor-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..... (no credit)	
‡Mus 195, 196, or 197 Band, Orchestra, or Choir.....	6
Mus 203 Music in the Western World.....	4
Upper-division Music History or World Music.....	4
‡Mus 395, 396, or 397 Band, Orchestra, or Choir.....	3
Total	35

† Concurrent enrollment in Mus 111, 112, and 113 is required.

‡ Music minors must enroll in Applied Music and the related large ensemble.

To be taken concurrently with Applied Music

Requirements for Minor in Jazz Studies.

To earn a Minor in Jazz Studies, a student must complete 35 advisor-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..... (no credit)	
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

† Concurrent enrollment in Mus 111, 112, and 113 is required.

‡ Music minors must enroll in Applied Music and the related large ensemble.

To be taken concurrently with Applied Music

Requirements for Minor in Music History.

To earn a Minor in Music History, a student must complete 31 advisor-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
(Concurrent enrollment in MUS 114, 115 & 116 is not required for this minor.)	
Mus 188 Performance Attendance (Six terms are required.)..... (no credit)	
Mus 191, 192, and 193 Class Piano.....	6
Mus 203 Music in the Western World.....	4
Three elective courses:.....	12
Mus 304, 305 & 306 Music History	
Mus 355 Jazz History	
MUS 360 The Guitar: Its Music and History	
MUS 361/362 History of Rock Music	
MUS 374/375 World Music	
MUS 376 American Musical Traditions	
Total Music Credits	31

Graduate programs

Graduate Coordinator: **R. Babcock**

The School of Music offers graduate work in music leading to the degrees of Master of Music (M.M.) in Performance, Master of Music (M.M.) in Conducting, Master of Music (M.M.) in Jazz Studies, as well as a Master of Arts in Music (M.A.) and a Master of Science in Music (M.S.). The M.A./M.S. degrees are general master's degrees in music. Graduate students in music may also pursue recommendation for standard teaching 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.

Students applying to the M.A./M.S. programs must complete an interview and submit one of the following as part of their application process:

1. History Paper
2. Theory Paper, descriptive analysis or composition.
3. Audition Performance demonstrating mastery at the MUP 490 level.
4. Teaching Certificate.

Students applying to the M.M. in Performance/Conducting must complete an interview and audition. See the School of Music's Web site at www.pdx.edu/music for specific area requirements.

ALL MASTERS PROGRAMS

In addition to meeting the general requirements for admission to graduate study in the University, each student must successfully take the music placement examination prepared by and administered in the School of Music. The placement examination must be passed or the recommended review course must be passed with a grade of B or better before a student may enroll in a grad-

uate history or theory course. All courses used to satisfy graduate requirements, whether taken in the department or elsewhere, must be graded B or above.

Degree requirements

M.A./M.S. PROGRAM

All M.A./M.S. candidates must take a final written examination.

Core curriculum	Credits
All of the following:	
‡MuP 590 Applied Music.....	2
MuP 591 Applied Music-Secondary Instrument (may substitute MuP 590 credits with adviser approval).....	2
Mus 506 Graduate Recital.....	2
Mus 511 Research Methods.....	3
Mus 520 Analytical Techniques.....	3
Ensemble: Chosen with advice of graduate faculty.....	3
Education/Pedagogy (chosen with adviser's assistance).....	9
One of the following:.....	3
Mus 521-523 Arranging.....	3
One of the following:.....	3
Mus 530-540 Music Literature.....	4
Two of the following:.....	4
Mus 560-566 Music History.....	3
One of the following:.....	3
Mus 541 Advanced Conducting (Instrumental), Mus 542 Advanced Conducting (Choral).....	8
Elective Studies.....	8
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.....	45
Total	45

M.M. PROGRAM

Master of Music in Performance*	Credits
‡MuP 590 Applied Music.....	12
Mus 506 Graduate Recital.....	2
Mus 594, 595, 596, 597, 598 Chamber Music and/or Ensemble.....	3
Mus 511 Research Methods.....	3
Mus 520 Analytical Techniques.....	3
Two of the following:.....	4
Mus 560-566 Music History.....	3
Two of the following:.....	6
Mus 530-540 Music Literature.....	3
One of the following:.....	3
Mus 581, 582 or 583 Pedagogy.....	9
Electives (Determined in conjunction with advisor).....	9
Total	45

*For an M.M. in Vocal Performance consult the School of Music for Language Requirement.

Master of Music in Conducting	Credits
Three of the following.....	9
Mus 541 Advanced Conducting Methods.....	3
Mus 542 Advanced Choral Conducting.....	3
Mus 543 Advanced Instrumental Conducting*.....	3
Mus 506 Graduate Recital.....	2
Mus 511 Research Methods.....	3
Mus 513 Score Reading.....	3
Mus 520 Analytical Techniques.....	3
One of the following:.....	3
Mus 521 Band Arranging.....	3
Mus 522 Orchestra Arranging.....	3
Mus 523 Choral Arranging.....	3
Two of the following:.....	4
Mus 560-566 Music History.....	3
One of the following:.....	3
Mus 532 Band Literature.....	3
Mus 533 Orchestra Literature.....	3

Mus 534 Choral Literature	
Mus 595, 596, 597 Ensemble	6
Electives	9
(Determined in conjunction with advisor)	
Total	45

*May be taken multiple times.

Master of Music in Jazz Studies	Credits
All of the following:	
*MuP 590 Applied Music.....	12
Mus 506 Project: Graduate Recital	2
Mus 511 Research Methods (Music)	3
Mus 520 Analytical Techniques (jazz section)....	3
Mus 526 Instrumental Jazz Arranging	2
Mus 540 Jazz Literature	3
Mus 567 History of Jazz.....	2
Mus 581 Pedagogy: Jazz	3
One of the following:.....	2
Mus 560-566 Music History	
Complete 3 credits from the following:.....	3
Mus 594 Chamber Music: Jazz Combo	
Mus 598 Major Ensemble: Jazz Lab Band	
Elective Studies Selected with Advisor:	10
Music electives are determined in conjunction with the adviser and chosen from these areas: applied music, theory, diction, arranging, composition, music history, world music, music literature, pedagogy, conducting, or additional ensemble performance.	
Total	45

All M.M. degree candidates must take a final oral examination. All graduate students must receive a grade of B or above in music courses.

Courses

Courses with an asterisk () are not offered every year.*

MuEd 328

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 (1)

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 (1)

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. Required for students in the Music Education Program.

MuEd 335

Percussion Techniques (1)

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. Required for students in the Music Education Program.

*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 concepts, and improvisation. Prerequisite: instructor approval.

MuEd 420/520, 421/521

Choral Literature and Rehearsal Techniques (3, 3)

Methods and materials for teaching choral music in grades 6-12. Students will serve as a Lab Choir for each other as they learn to rehearse live choral ensembles. Identification and selection of appropriate literature, teaching musical literacy, and the building and management of choral programs are core areas of study. Prerequisites: Mus 322, MuEd 328, 334.

MuEd 422/522

Instrumental Literature and Rehearsal Techniques I (3)

Study of the literature and rehearsal techniques for teaching instrumental music in grades 5-8 primarily. Students will serve as a lab ensemble for each other and will play primary and secondary instruments. Score study, appropriate literature selection and administration of a middle school instrumental program are the core areas of study. Prerequisites: Mu 321, MuEd 328, 335 336, 337.

MuEd 423/523

Instrumental Literature and Rehearsal Techniques II (3)

Study of the literature and rehearsal techniques for teaching instrumental music in grades 9-12, primarily. Students will serve as a lab ensemble for each other and will play primary and secondary instruments. Score study, appropriate literature selection and administration of a high school instrumental program are the core areas of study. Prerequisites: Mus 321, MuEd 328, 335 336, 337, MuEd 422/522.

MuEd 480/580

Kodály Training: Level I (5)

Introduction to the Kodály approach and its applications in the field of Music Education. Students will participate in pedagogy, folk music,

musicianship, materials, and choir classes within the course. Prerequisites: junior standing.

MuEd 481/581

Kodály Training: Level II (5)

Continuation of the Kodály approach and its applications in the field of Music Education. Students will participate in pedagogy, folk music, musicianship, materials, conducting, and choir classes within the course. Prerequisites: MuEd 480 or other Kodály Level I coursework.

MuEd 482/582

Kodály Training: Level III (5)

The third level in the Kodály approach and its applications in the field of Music Education. Students will participate in pedagogy, folk music, musicianship, materials, conducting, and choir classes within the course. Prerequisites: MuEd 481 or other Kodály Level II coursework.

MuEd 583

Kodály Training: Level IV (5)

The final level in the Kodály approach and its applications in the field of Music Education. Students will prepare a dvd of their teaching and present their projects/dvds for evaluation as well as participate in pedagogy, folk music, musician-ship, materials, conducting, and choir classes within the course. Prerequisites: MuEd 482/582 or other Kodály Level III coursework.

MuEd 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 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 174

Introduction to Music Technology (3)

A hands-on introduction to the basic concepts, equipment, and software involved in modern music production. Covers introduction to MIDI sequencing, analog and digital audio, and basic studio techniques.

**Mus 185
Guitar Orchestra (1)**

A large guitar ensemble. Audition required.

**Mus 187
Yoga, Relaxation and
Flexibility for Musicians (1)**

A course for musicians that incorporates gentle stretching, mild postures, breathing and relaxation techniques. Class participants will be guided through activities drawn from the disciplines of yoga, Tai Chi, and general flexibility and relaxation exercises. There are no pre-requisites for this class. Equipment required: yoga mat and strap. Optional equipment: yoga block.

**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 (1-2)**

Freshman year. Individual instruction in organ, piano, harpsichord, voice, guitar, orchestral and band instruments. Maximum: 12 credits. 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. Music majors in Mus 193 Class Piano should be enrolled in Mus 046 concurrently.

**Mus 194
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. 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 204
Body Mapping for Musicians (2)**

Anatomical information about the body in movement for musicians. Topics include sensory awareness, inclusive awareness, standing and sitting at balance, skeletal anatomy of the arms and legs, the structures and movements of breathing, hearing loss prevention, and performance anxiety. Prerequisites: At least one year of experience as a singer or instrumentalist.

**Mus 205, 206
Listening I, II (1, 1)**

Online listening survey of the major works within various musical traditions, including Western art music, Jazz, American music, and World music.

**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 course is required. Prerequisites: Mus 46, 113, and 116.

**Mus 214, 215, 216
Sight Singing and Ear Training (1, 1, 1)**

Continuation of the study of sight-singing and ear training at an advanced level. Ability to sing notation at sight and to recognize and notate aural patterns. Registration in the appropriate Music Theory II course is required. Prerequisites: Mus 113 and 116.

**Mus 240, 241, 242
Composition (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 (1-2)**

Sophomore year. Continuation of MuP 190. Maximum: 12 credits. Prerequisites: MuP 190 and audition.

**Mus 291, 292, 293
Advanced Class Piano (2, 2, 2)**

Advanced class instruction developing functional piano skills. Activities include performing scales, chords, and progressions in all keys. Students develop harmonization, sight reading, and improvisation skills. They perform simple piano pieces and accompaniments.

**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, 204, 205.

**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 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 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 364**Modern Music Technology (4)**

An in-depth examination of digital technologies used for creating and distributing music, and the social impact of these technologies.

Mus 365**Film Music (4)**

An aesthetic, historical, commercial, and technical examination of the role of music and sound design within the art of film.

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. Instruction includes integration projects in Music for the elementary classroom.

Mus 385**Guitar Orchestra (1)**

A large guitar ensemble. Audition 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.

MuP 390**Applied Music (1-2)**

Junior year. Continuation of MuP 290, including composition. Maximum: 12 credits. Prerequisites: MuP 290 and upper division examination.

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 411****Topics in Music History (2)**

Examines a selected theme in music history to be drawn from specific composers, performers, genres, styles, works, geographical locations, or time periods. Topics will be contextualized to address broader issues of race, ethnicity, gender, cultural significance, ownership, transmission, technology, and globalization. Specific topics vary by term. Course may be taken more than once with permission of instructor. Prerequisites: Mus 306.

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 422**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.

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 fall 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 majors. Prerequisite: by consent of instructor.

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 446/546, 447/547, 448/548
Coordinate Movement Master Class (1,1,1)

Provides pianists with information about the structure and function of the body as it relates to playing the piano. Prerequisite: at least three years piano performance experience.

***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 sight reading, 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 476**Computer Music Composition (3)**

Introduces concepts, applications, and projects in sound synthesis, sampling, and digital signal processing. Students learn to create real-time compositions using a graphical programming environment and studio pieces using various sound editing applications. Prerequisite: MUS 242 or permission of instructor.

Mus 481/581, 482/582, 483/583
Pedagogy (3, 3, 3)

Methods, materials, curriculum, and philosophical basis for teaching in a private studio and classroom with focus on individual and group instruction. Prerequisites: Mus 213, 216, 304, 305, 306.

***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 (1-2)

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.

Mus 503
Thesis (Credit to be arranged.)**Mus 506**
Graduate Project or Recital (2)

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.

Mus 520
Analytical Techniques (3)

Study 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: Successful completion of the departments graduate entrance placement examination is required.

***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)

A study and analysis of classic jazz compositions and recordings with the goal of increasing aural recognition of styles, pieces, and performances, developing a bibliography of resources for studying and teaching jazz literature, and understanding the use of jazz literature as a pedagogical tool.

Mus 541
Advanced Conducting Methods (3)

Study of the concepts of conducting applied to a wide range of music literature. Music of different eras will be used to analyze and practice the conductor's process. Incorporated into the study of conducting will be rehearsal techniques and relevant historical and theoretical concepts, providing an integrated study of the conductor's art. This course is intended for MA/MS in Music graduate students, MM in Conducting graduate students, or senior-level undergraduate students with instructor permission. Prerequisite: graduate standing in music or permission of instructor.

Mus 542
Advanced Choral Conducting (3)

Study of the concepts of conducting applied to a wide range of choral music. Music of different eras will be used to analyze and practice the conductor's process. Incorporated into the study of conducting will be rehearsal techniques and relevant historical and theoretical concepts, providing an integrated study of the conductor's art. Particular attention given to the creative role of the University, Church, Community, and Public School Choir Director. This course is intended for MM in Conducting graduate students. Prerequisite: graduate standing in music.

Mus 543
Advanced Instrumental Conducting (3)

Study of the concepts of conducting applied to a wide range of instrumental music. Music of different eras will be used to analyze and practice the conductor's process. Incorporated into the study of conducting will be rehearsal techniques and relevant historical and theoretical concepts, providing an integrated study of the conductor's art. Particular attention given to the creative role of the University, Community, Professional, and Public School Band or Orchestra Conductor. This course is intended for MM in Conducting graduate students. Prerequisite: graduate standing in music.

***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. Prerequisites: instructor approval.

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.

MuP 590

Applied Music (1-2)

Individual instruction in organ, piano, harpsichord, voice, guitar, conducting, 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 046

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 048

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 049

Senior Recital (No credit)

Music majors must present all or part of a recital during their senior year (60 minutes minimum).

Mus 188

Performance Attendance (No credit)

The student is expected to attend a minimum of eight live performances approved by the School of Music for each term registered. It is expected that students will register for Performance Attendance concurrently with registration for Applied Music.

Courses with an asterisk () are not offered every year.*



School of Theatre and Film

127 Lincoln Hall
tel 503-725-4612
fax 503-725-4624
www.pdx.edu/theatre-film

B.A., B.S. in Theater Arts
B.A., B.S. in Film
Minor in Theater Arts
Minor in Film Studies
Minor in Dance
Secondary Education Program - Drama
M.A., M.S. in Theater Arts

Undergraduate programs

The School of Theatre and Film is committed to providing liberal arts based professional training that imaginatively balances theory and practice. Through classroom study, studio/laboratory preparation, field studies, and stage productions, students are challenged to pursue a commitment to individual excellence and collaboration, discover a passion for their discipline, and develop a firm grounding in the core components of live and mediated performance. Students seeking professional careers, preparing for advanced degree programs, training to be educators, or pursuing interdisciplinary studies in the arts participate in contemporary production and critical studies practices encompassing new, modern, and classic works interpreted to confront and illuminate the diverse concerns of contemporary life.

Production is an essential and integral part of the department's educational mission. Students are provided with a variety of opportunities to gain experience and develop creative and collaboration skills both before and behind the scenes. In the selection of dramatic narrative and other works, the department seeks to reflect vital contemporary issues, personal and public, in varied and challenging forms, new and classic, thereby creating a forum for cultural and social concerns. The program actively pursues the development of new works and practice, collaborations with urban arts and educational institutions, and the expansion of cultural exchange.

The School of Theatre and Film is an accredited institutional member of the National Association of Schools of Theatre.

The university's urban location enables the School of Theatre and Film to provide students with the richest diversity of teaching staff in the studio and the maximum of diverse educational experiences without. The resident faculty are active members of the region's arts

and creative community, as professional practitioners as well as educators. Their work is represented at every major theater company in the area, as well as through other arts organizations including smaller theaters, film units, dance companies, production companies, the media, and educational institutions. They frequently engage their students as assistants on creative projects, and they facilitate student placements as interns and regular employees with a variety of organizations. The associate faculty are of the highest caliber, both as practicing artists and as teachers of their craft.

Graduates of the program have gained admission to both university graduate programs and professional training programs, they have entered the profession directly, they have become teachers and university professors, and they have pursued a range of related professions in the arts, commerce, law, social services and the public sector.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Theatre and Film's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admissions requirement

See "Admission requirements" on page 33 for information on general admission to the University. See www.pdx.edu/theatre-film/ for information on admission to programs in the School of Theatre and Film.

Majors are required to meet with an adviser during their freshman year before they will be allowed to register for the following fall classes. Majors also must be admitted to the program before taking upper division courses. Students should apply for admittance to the major a term prior to attaining junior status.

Degree requirements

Requirements for the major in theater arts. Undergraduates in theater arts are expected to acquire basic skills in performance, design and production, dramatic literature, and theater history. These basic skills are developed in the core requirements. The remaining credits allow a student to specialize in an area of interest.

In addition to meeting the general University degree requirements, the Major in Theater Arts a student must complete 68 adviser-approved theater arts credits to include the following:

	Credits
TA 111, 112 Technical Theater I and II.....	6
TA 114, 115 Technical Theater Production I, II.....	2
TA 248 Acting I: Process.....	4
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 454 Directing I.....	4
TA 464, 465 Development of Dramatic Art I, II.....	8
12 credits chosen from the following:.....	12
TA 330 Multicultural Theater	
TA 369 Women, Theater, and Society	
TA 467, 468 Modern Theater I and II	
TA 471 Theater History: Periods/Topics	
TA 472 Theater History: Major Figures	
4 credits of TA 333 Workshop Theater II: Stage Production, TA 334 Workshop Theater II: Scenic-Lighting Production, TA 335 Workshop Theater II: Management/Public Relations, TA 336 Workshop Theatre II: Costume Production, 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
12 elective credits from the theater curriculum with at least 6 carrying numbers 300 or above... 12	
Total	68

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 major requirements must be graded C or above.

At least 16 credits of upper-division Theater Arts courses, including 2 credits from TA 333, TA 334, TA 335, and/or TA 336 must be taken in residence at Portland State University.

Requirements for the minor in theater arts. To earn a minor in theater arts a student must complete 28 adviser-approved credits to include the following:

	Credits
TA 101 or TA 305.....	4
TA 301.....	4
Four credits chosen from:.....	4
TA 369 Women, Theater, and Society	
TA 464, 465 Development of Dramatic Art I and II	
TA 467, 468 Modern Theater I and II	
TA 471, 472 Theater History	
16 elective credits from the theater curriculum with at least 8 carrying numbers 300 or above... 16	
Total	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. All courses used to satisfy the minor requirements must be graded C or above.

At least 12 credits must be taken in residence at Portland State University.

Requirements for the major in film. The Bachelor of Arts/Bachelor of Sciences in Film is designed to offer students the opportunity to major in a diverse film curriculum that

prepares them for a variety of careers in visual expression and understanding. Students in the program will study all forms and genres of the moving image, ranging from the silent film era to present day cinema, television, and digital video production. The faculty are committed to providing strong emphasis on written, oral and visual expression and critical thinking, diverse and international perspective, and creative experiences.

In addition to meeting the general University degree requirements, the major in film will plan a program with a faculty adviser that meets the following minimum requirements:

TA 131 Film Analysis	4
TA 301 Script Analysis	4
TA 381, 382, 383 Film History I, II, III (4, 4, 4).....	12
TA 480 Film Theory	4
16 credits chosen from the following:	16
TA 384, 385 American Cinema and Culture I, II	
TA 474, 475 Dramatic Writing I, II	
TA 484, 485 Anatomy of a Movie I, II	
*16 elective credits chosen from the Film curriculum courses with at least 12 carrying numbers 300 or above.....	16
Total	56

Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling major requirements. Additional courses may be required as prerequisites. All courses used to satisfy the major requirements must be graded C or above.

At least 16 credits of upper-division major courses must be taken in residence at Portland State University.

*Students may also seek program adviser approval to substitute elective coursework from other film courses in the university.

Requirements for the minor in film studies. To earn the interdisciplinary minor in film studies, a student must complete 28 adviser-approved film credits to include the following:

	Credits
TA 131 Film Analysis or	
TA 135 Classic Movies	4
English 304 Critical Approaches to Cinema	4
*20 elective credits from the Film curriculum with at least 12 carrying numbers 300 or above.....	20
Total	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.

*Students may elect to pursue the film studies minor in the School of Theatre and Film, English or Communications, and should consult the department's film advisor for a complete list of courses that would apply to the minor from offerings in each department.

Requirements for the minor in dance.

To earn a minor in dance, a student must complete 28 adviser-approved credits in dance to include the following:

TA 104 or TA 304 Dance Appreciation (4)	
TA 351 Dance Composition (4)	
TA 362U 20th Century Dance (4)	12

Dance electives (at least 8 upper-division):

TA 193 Dance Lab.: Modern (2)	
TA 196 Dance Lab.: Ballet (2)	
TA 197 Dance Lab.: Jazz (2)	
TA 195 Dance Lab.: Topics (2)	
TA 350 Dance Improvisation (4)	
TA 352 Choreography (4)	
TA 366 Dance in Film: Early Years through 1940s	
TA 367 Dance in Film: 1940s to Present	
TA 393 Dance Lab.: Modern (2)	
TA 396 Dance Lab.: Ballet (2)	
TA 397 Dance Lab.: Jazz (2).....	16
Total	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 104 Dance Appreciation. All courses for the minor must receive a grade of C or above.

At least 12 dance credits must be taken in residence at Portland State University.

SECONDARY TEACHER EDUCATION PROGRAM—Drama

Adviser: K. Magaldi

It is crucial that students who wish to teach theater in secondary school be in contact with the School of Theatre and Film 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 School of Theatre and Film 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 playwriting, 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 or film 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 cancelled.

Degree requirements

University master's degree requirements are listed on page 65. 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 24 credits in theater arts, including 4 credits in script analysis, 4 credits in acting, 4 credits in directing, 8 credits in technical theater, and 4 credits in costume, scenic and/or lighting design 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 adviser-approved courses in theater arts. Twelve credits may be taken in approved areas outside the School of Theatre and Film. 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, scenic design, lighting design, costume design, or acting; 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/film 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 dramatic writing, 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 102

Introduction to Acting (4)

A study in the basic building blocks of how to approach, prepare, and act a role. Text analysis, improvisation, exercises to expand the imaginative world of the play, preparation, commitment to an action, commitment to body and voice exercises to increase awareness, and how to work collaboratively.

TA 104

Dance Appreciation (4)

Develop an awareness and appreciation of dance in its artistic, social and cultural contexts through a variety of experiences, viewing and participating in dance. Will cover the basic roles in dance along with concepts and principals such as space, time and effort as well as expression, form, style and period.

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 the 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

Film Analysis (4)

An introductory course in film analysis with special emphasis on cinema as a dramatic art and concepts related to the formal analysis of film. 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 directorial concept and the screenplay. Relationships between film and theater will be examined.

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 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 193

Dance Laboratory: Modern I, II, III (2, 2, 2)

Beginning modern dance technique, emphasis on body alignment, strength, flexibility and development of basic technical skills. Maximum: 12 credits.

TA 195

Dance Laboratory: Topics I, II, III (2, 2, 2)

Beginning dance technique in topics to be named, for example musical theatre, tap, hip hop, etc. Maximum: 12 credits.

TA 196

Dance Laboratory: Ballet I, II, III (2, 2, 2)

Beginning ballet technique, emphasis on body alignment, development of basic technical skills, and understanding basic ballet vocabulary. Maximum: 12 credits.

TA 197

Dance Laboratory: Jazz I, II, III (2, 2, 1)

Beginning laboratory in jazz dance technique emphasizing body alignment, contraction, and isolation technique of Latin, West Indian, African and American rhythms. Maximum: 12 credits.

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 248

Acting I: Process (4)

The first acting class for the major. Emphasis on the building blocks of actor technique leading into scene work: text analysis for the actor, preparation, commitment, character arc, boldness, rhythm, living a life onstage, and collaboration. This course is rigorous and demands outside time commitment for rehearsal. Prerequisites: TA major; TA 111, 112 or sophomore standing.

TA 252

Stage Makeup (2)

A study of the basic principles of the art and technique of makeup for stage and screen.

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 257

Digital Video Production I (4)

A study of aesthetic and technological principles as related to digital video production in narrative formats. Prerequisites: TA 131 or TA 331; Film majors only.

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 304

Dance Appreciation (4)

Develop an awareness and appreciation of dance in its artistic, social and cultural contexts through a variety of experiences, viewing and participating in dance. Covers the basic roles involved in dance along with concepts and principals of dance such as space, time and effort as well as expression, form, style and period. Prerequisite: Upper-division standing.

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 322

History of Dress I (4)

Historical survey of dress in Western civilization from ancient Egyptian to modern times with emphasis on aesthetic, cultural, and political expressions of clothing. Course may be taken out of sequence. Prerequisites: upper-division standing.

TA 323

History of Dress II (4)

Historical survey of dress in Western civilization from ancient Egyptian to modern times with emphasis on aesthetic, cultural, and political expressions of clothing. Course may be taken out

of sequence. Prerequisites: upper-division standing.

***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 331

Understanding Movies (4)

An intermediate 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. Recommended prerequisite: upper-division standing.

TA 333

Workshop Theater: Directing/Stage Management/Dramaturgy (1)

For the School of Theatre and Film productions. Offerings include stage manager, assistant director, dramaturg, choreography, and music direction. Participants are required to audition or interview for Main Stage and/or Studio productions. Information about auditions/interviews is provided on the Theatre Call Board outside of LH 127. Meeting times are arranged by the director. Most performances and rehearsals are in the evening; therefore, evening classes will usually conflict. Technical rehearsal for mainstage productions require a full weekend technical schedule. Course is repeatable for credit.

TA 334

Workshop Theater: Scenery & Lighting Production (1)

For PSU Theatre and Film Department productions. Offerings include scene construction and painting, costume construction and crew, stage/run crews, props, sound design and crew, lighting design and crew. Meeting times depend upon the assignment registered for, but usually include daytime, evening, and/or weekends. Technical rehearsal for mainstage productions require a full weekend technical schedule. Course is repeatable for credit.

TA 335

Workshop Theater: Management/Publicity (1)

For PSU Theatre and Film Department productions. Offerings include house management, public relations, audience development, publications, educational outreach, and display. This course meets each term for one hour per week as a

group, with the remaining meeting times depending upon the specific assignments for the term in question. Meeting times depend upon the assignment registered for, but may include daytime, evening, and/or weekends. Course is repeatable for credit.

TA 336

Workshop Theater: Costume Production (1)

For PSU Theatre and Film Department productions. Offerings include wardrobe crew head, wardrobe crew, makeup head/crew, wigs head/crew, assistant designer, cutter/drafter, dyer, costume artisan, milliner, stitcher.

TA 340

Acting II: Scene Study (4)

Building on TA 248, coursework deepens the student actor's understanding of arc, character development, commitment, rhythm of sound and language, and choices that ignite the text. Class demands commitment to intense scene work outside the classroom. Must be taken in sequence. Prerequisites: TA major, TA 248, and permission of instructor.

TA 341

Acting III: Classical Text (4)

Building on TA 340, and using increasingly difficult texts, this advanced class moves the actor further into technique. Language and epic style is a major focus of the work, with emphasis on such writers as Shakespeare, Moliere, Behn, and Ford. Class demands commitment to intense scene work outside the classroom. Prerequisites: TA major; TA 248 and TA 340, and permission of instructor.

TA 342

Advanced Acting (4)

Builds on past lessons and explores the way we rehearse and apply our craft. Individual acting blocks are addressed. Advanced acting problems are explored through complex texts. Must be taken in sequence. Prerequisites: TA major; TA 341, and permission of instructor.

***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 345

Topics in Acting (1-4)

Intensive study of a particular subset of performance, for example, How 2 B Funny, Audition Techniques, Movement Performance or Stage Combat.

***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 248 or consent of instructor.

***TA 350**

Dance Improvisation (4)

An exploration of spontaneous movement as individual and group creativity and expression, as a potential performance form and as the beginnings of choreography. "The body thinks." Designed to

develop awareness, focus, sensitivity and personal movement vocabularies. Recommended: upper division standing.

***TA 351**

Dance Composition (4)

Exploration of basic elements of dance and choreographic strategies through readings, observations and preparation of solo dance studies. Recommended: upper division standing.

***TA 352**

Dance Choreography (4)

Exploring compositional devices and craft unique to group choreography. Choreographing and producing a dance in a performance setting. Recommended prerequisites: TA 350, TA 351.

TA 358

Digital Video Production II (4)

An intermediate course in the study of aesthetic and technological principles as related to digital video production in narrative and non-narrative formats. Prerequisites: TA 131 or TA 331; TA 257; Film majors only.

TA 359

Digital Video Production III (4)

An advanced course in the study of aesthetic and technological principles as related to digital video production in narrative and non-narrative formats. Prerequisites: TA 131 or TA 331; TA 257; TA 358; Film majors only.

TA 360

Topics in Digital Video Production (4)

Focused study of a variety of specialized areas related to digital video production. From quarter to quarter topics might include: Cinematography; Lighting; Editing Strategies; Sound and Design. Course may be repeated for credit with different topics. Prerequisites: TA 131 or 331; TA 257; Film majors only.

TA 361

Theater Appreciation (4)

An intermediate course in the art of the theater: acting; directing; playwriting; and, design. Special emphasis on theater as a performing art today, not the history or origins of the theater. Course involves in part, attendance at live performances in the Portland area. Prerequisite: upper-division standing.

TA 362

Contemporary Dance 1920 to Present (4)

Historical foundations for the development of current dance forms. Contemporary dance styles and theories will be studied via lectures and videos, field trips to exhibits and concerts. Recommended: upper division standing.

TA 365

Classic Movies (4)

An intermediate study and analysis of representative films with special emphasis on the importance of directorial concept and the screenplay. Relationships between film and theater will be examined. Recommended prerequisites: upper division standing.

***TA 366**

Dance in Film:

Early Years through the 1940s (4)

Focus on the Hollywood musical genre, early years of film to 40s, including choreographers, performers, dance styles, what role the dance serves in the films, what defines the genre and how it developed, the social cultural connections, industry practices, dance history - popular trends to modern dance. Also cultural context, concu-

rent historical events, social trends, innovations, politics.

***TA 367**

Dance in Film: 1940s to Present (4)

Focus on dance in popular film, 1948 to present, including choreographers, performers, dance styles, what role dance serves in the films, social cultural connections, dance history – popular trends to modern dance. Will consider cultural context --concurrent historical events, social trends, innovations, politics.

***TA 369**

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 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, Vietnam on Film, Film History, Film Genres, and Hitchcock.

TA 374

Topics in Screenwriting (4)

Course in screenwriting involving short and long form screenplays, the analysis of narrative structure for the screen, and the practical application screenwriting techniques. Course may be repeated for credit with different topics. Prerequisites: TA 131 or TA 331; Film majors only.

TA 381

Film History I: 1894 to the Second World War (4)

A study of the evolution of film language from the silent era to the introduction of sound; how the influences of a broad range of cinematic art movements, including Expressionism, Impressionism, Surrealism and Poetic Realism, contributed to the classical Hollywood style. Also examines the artistic, economic and technological forces that led to the Hollywood studio system and the popularity of genres such as the western, the musical and the gangster film. Prerequisites: TA 131 and sophomore standing recommended. Co-requisite: TA 381L Film History I Lab (zero credits).

TA 382

Film History II: Cinema and Modernism (1946-1970's) (4)

A study of the major artistic, economic and technological trends of motion picture production during the post-war era; how directors such as Hitchcock and Welles were able to find a unique expression within the parameters of the classical style and the commercial pressures of the studios. Explores how world cinema movements presented aesthetic and political challenges to the Hollywood model. Prerequisites: TA 131 and sophomore standing, or consent of instructor. Co-requisite: TA 382L Film History II Lab (zero credits).

TA 383

Film History III: Contemporary World Cinema (1970's-Present) (4)

A study of contemporary world film production from the struggles of an independent and avant-garde cinema to the CGI effects of today's block-

buster. Also examines how world cinema production has adapted to new digital technologies and the demands of a global market. Prerequisites: TA 131 and sophomore standing recommended.

Co-requisite: TA 383L Film History III Lab (zero credits).

TA 384

American Cinema and Culture I (4)

Examination of the American film industry as an art form, as an industry, and as a system of representation and communication within the context of American popular culture. Rather than being strictly chronological, the course focuses on ideas, problems, issues, and thematic concerns. Primary period of focus will extend from the era of the speechless cinema through 1945. Recommended prerequisites: TA 131 and sophomore standing.

TA 385

American Cinema and Culture II (4)

Examination of the American film industry as an art form, as an industry, and as a system of representation and communication within the context of American popular culture. Rather than being strictly chronological, the course focuses on ideas, problems, issues, and thematic concerns. Primary period of focus will extend from the end of WWII to the present. Recommended prerequisites: TA 131 and sophomore standing.

TA 393

Dance Laboratory: Modern I, II, III (2)

Intermediate modern dance technique, emphasis on body alignment, strength, flexibility and development of intermediate level technical skills. Maximum: 12 credits. Recommended TA 193 I, II, III or previous dance experience.

TA 396

Dance Laboratory: Ballet I, II, III (2)

Intermediate level ballet technique. Emphasis on execution and application of all basic ballet vocabulary and on alignment and skill development. Maximum: 12 credits. Prerequisite: low-intermediate technique required; TA 196 Dance Lab: Ballet I, II, III.

TA 397

Dance Laboratory: Jazz I, II, III (2)

Intermediate laboratory in jazz dance technique emphasizing body alignment, contraction, and isolation technique of Latin, West Indian, and American rhythms. Maximum: 12 credits. Prerequisite: TA 197 Dance Lab: Jazz I, II, III.

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 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 440/540

Advanced Acting Studio (1-4)

Advanced studio work focusing on rehearsal technique, style, preparation, developing material, and working with diverse environments, all leading to a public performance. May be repeated for a total of 12 credit hours. Prerequisites: TA major; TA 342, by audition/interview and permission of instructor.

***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, 248, 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, 454. 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 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 Arraud. Prerequisite: upper-division standing.

TA 474/574, 475/575**Dramatic Writing I, II (4, 4)**

A sequence in scriptwriting involving analysis of dramatic structure, practical application of scriptwriting techniques. Must be taken sequentially. Recommended prerequisite: 8 credits of TA and/or English.

TA 480/580**Film Theory (4)**

A survey of film theory and criticism from their inception to the present day. Students are introduced to key concepts and major figures from Classical Film Theory (Eisenstein, Arnheim, Bazin) through Structuralism, Semiotics, Psychoanalysis, Feminism, and Cognitive Studies. Prerequisite: TA 131 and junior standing, or consent of instructor.

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 486/586**Topics in Film and the Moving Image (4)**

Concentrated study of genre, structure and style of a particular period, topic and/or figure in film and the moving image; for example, 1970's Film & TV Renaissance, Irish Cinema, and/or Robert Altman. Prerequisites: TA 131 and upper division standing.

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.

TA 525, 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 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.

School of Business Administration

SCOTT A. DAWSON, DEAN

JEANNE ENDERS, ASSOCIATE DEAN, UNDERGRADUATE PROGRAMS

SCOTT MARSHALL, ASSOCIATE DEAN, GRADUATE PROGRAMS

PAMELA TIERNEY, ASSOCIATE DEAN, FACULTY AND RESEARCH

UNDERGRADUATE PROGRAMS OFFICE

240 SCHOOL OF BUSINESS ADMINISTRATION BUILDING, 503-725-3712

<http://www.pdx.edu/sba/>

GRADUATE PROGRAMS OFFICE

540 SCHOOL OF BUSINESS ADMINISTRATION BUILDING, 503-725-8001

<http://www.pdx.edu/gradbusiness/>

B.A., B.S.—Business Administration
Minor—Advertising (for graphic design majors), Advertising (for communications majors), Business Administration
Certificate in International Business Studies
Certificate in Food Industry Management—Undergraduate
Postbaccalaureate Certificate in Accounting
M.B.A.—Master of Business Administration
M.S.—Master of Science in Financial Analysis
M.S.—Master of Science in Global Supply Chain Management
M.B.A. Healthcare—The Healthcare M.B.A.
M.I.M.—Master of International Management
MRED—Master of Real Estate Development
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. In addition, the accounting program has separate accreditation from the AACSB. 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, advertising, finance, human resource management, management & leadership, marketing, real estate, and supply and logistics management. The advertising minor for graphic design and/or communications majors, business minor, food industry management certificate, and international business studies certificate are also available. The School of Business also offers study abroad opportunities at the undergraduate and graduate levels.

The School of Business offers an Online Business Degree Program. Tailored for the student who works full time, the program allows students to complete their junior and senior years of the business program, two course per term guaranteed in three years. Students enrolled in the Online Business Degree Program will complete the full curriculum of standard business courses required for a bachelor's degree in business with an option in Management & Leadership. Admission and requirements for this program are similar to the traditional undergraduate program.

Student advising. Graduate academic and career advisers are located in 540 SBA and undergraduate academic and career 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, PSU career counselors, or a faculty member of their choice.



The School of Business Administration Web site, <http://www.pdx.edu/sba/>, contains announcements concerning policies, upcoming activities, scholarships, and other information vital to all business and prebusiness students. Information about student organizations, internships, and career opportunities can also be found there.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for the School of Business Administration's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

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 almost all upper-division (300 or 400 level) 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.

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 3.0 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 3.0 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 2.75 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 (waived for post-baccalaureate students)
 - BA 205—Business Communications Using Technology (waived for post-baccalaureate students)
 - 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)
 Comm 220—Public Speaking
 UnSt 101, 102, 103—Freshman Inquiry or Wr 121—College Writing

† See Undergraduate Programs Office for course substitutes approved by the SBA faculty.

Applications for admission are accepted anytime during the term.

Application forms and deadline dates are available online at www.pdx.edu/sba.

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.

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 three terms in which the student takes classes. In no instance will the period of probation extend beyond three consecutive terms beginning with the first term the student is placed on probation. By the end of the third term of probation, the student must raise the deficient GPA(s) to the required minimum.

Students who are disqualified must reapply for admission if they desire to complete degree requirements for programs in the School of Business Administration. Students applying for readmission must meet the admission requirements in force at the time of reapplication. Business students are limited to only one readmission to the School of Business Administration.

PSU 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 meet the current School of Business Administration admission requirements.

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 (50 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 busi-

ness. 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. Students must successfully complete the course with a C- or better.

Second Degree Students. You will need to meet the requirements for your major. In addition, you should meet with your academic adviser in the School of Business to determine if you have met the Bachelor of Arts or Bachelor of Science requirements. You may also want to meet with an adviser to determine if any of your previous course work counts towards the business major requirements.

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	6
Sub-total	50
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 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, 383 Financial Accounting and Reporting.....	12
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
One upper-division accounting course to be chosen from Actg 422, 460, 485, 490, 493	4
Total	37

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.

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 Consumer Behavior and Customer Satisfaction	4
Mktg 441 Media Strategy	4
Mktg 442 Creative Strategy	4
Mktg 443 Advertising Campaigns or NSAC (4)*	4
Mktg 460 Marketing Research	4
Total	24

* *Note: Advertising Management Students may contact the Undergraduate Programs Office at (503) 725-3712 for a referral to the professor in charge of the National Student Advertising Competition (NSAC).*

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 352 Investments	4
Fin 441 Fundamentals of Derivative Securities....	4
Fin 449 Valuation	4
Fin 456 International Financial Management....	4
Fin 465 Finance Topics and Cases.....	4
Total	28

Human Resource Management

Objective: to provide a conceptual framework, as well as the necessary knowledge, skills, and abilities, that allow 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 management & leadership and human resource management cannot apply more than eight common credits to each option.

Management & Leadership

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:	

a. within the management area at the 400 level, or b. from an approved list of courses.

Total 24

Note: Students who wish to do a double option in management and leadership and human resource management cannot apply more than eight common credits to each option.

Marketing

Objective: to provide educational opportunities for those who are interested in developing expertise in marketing strategy and management, marketing innovation 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 eight credits from one of the following three tracks:	
Marketing innovation and technology track:	
Mktg 450 Product Innovation and Management (4)	
Mktg 461 E-marketing (4),	
Mktg 463 Service Innovation (4)	
Food and consumer package goods marketing track:	
Mktg 375 Retailing (4)	
Mktg 435 Consumer Package Goods Marketing (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

Real Estate

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, urban economics, appraisal, and investment.

	Credits
Fin 319 Intermediate Corporate Finance	4
RE/USP 360 Real Estate Finance I	4
USP 423 Real Estate Development.....	4
RE/EC/USP 431 Urban Economics.....	4
USP/RE 438 Real Estate Law	3
RE 439 Real Estate Valuation I	3
RE 460 Real Estate Finance II	4
Total	26

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 (at least one must be ISQA from below):	
ISQA 430 Transportation (4)	
ISQA 431 Transportation Regulation (4)	
ISQA 440 Governmental Procurement (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)

Other electives as approved by Supply and Logistics faculty.

Total 21-24

SBA Honors Track. The SBA Honors Track is a two year program with approximately 50 undergraduate business students (25 accepted each year) who are admitted to the SBA. Honors track students challenge themselves and polish their professional and academic business skills through a combination of special honors track sections of core business classes and a variety of extra-curricular workshops and events. Honors track students enjoy special opportunities to interact with business professionals, including CEOs, presidents, and vice-presidents of local and national companies. The honors track classes prepare students for MBA level work. Successful completion of all track requirements results in a separate designation on the student's diploma.

Requirements for honors track designation include:

- Honors only sections for BA 301, 385, and 495
- Perspectives in Leadership
- Required one-day workshop each term (excluding summer term)
- Advanced Business Communications Workshop
- Executive Days in Residence
- Honors Book Group
- Advanced Excel Workshop

For admission to the honors track students must be degree-seeking undergraduates who are admitted to the SBA by the end of the summer term prior to starting the honors track. Applications are evaluated based on GPA, application essays, and recommendation letters. Students must apply in the spring or summer term before the fall term in which they wish to be admitted to the honors track. A maximum of 25 students are accepted each fall for admission to the honors track.

Honors track requirements are subject to change. For the most current honors track requirements and more detailed application information visit: www.pdx.edu/sba/business-honors-track.

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 sci-

ences 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 School of Business Administration Undergraduate Programs Office. 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

Requirements for advertising minor for communications majors.

The Advertising Management minor for communication majors requires 24 credit hours. The objective of this minor is to familiarize communication majors with general business practices and the marketing communications industry specifically. The undergraduate minor's focus is interdisciplinary, including courses in the School of Business and the communication department. Twenty of these hours will be taken within the School of Business (SBA) and four credit hours can be a communication or SBA elective.

Five required courses:

BA 311 Marketing Management	4
Mktg 340 Introduction to Advertising (prerequisite for all other SBA courses)	4

Mktg 441 Media Strategy	4
Mktg 442 Creative Strategy	4
Mktg 443 Advertising Campaigns	4
Plus one Comm or SBA elective from the following:	
Mktg 341 Public Relations	4
Comm 399 Introduction to PR	4
Comm 489 Media Ethics	4
Mktg Digital Media Planning & Design	4

Note: Students may take either one of the Public Relations courses offered by the two programs but not both as elective credit for this minor. In addition, the following is a prerequisite for communication majors who elect to pursue this minor: Comm 212 Mass Communication and Society.

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

Three of the following:

- Fin 456 International Financial Management
- Mktg 376 International Business
- Mktg 446 International Management
- Mktg 466 Principles of International Marketing or other courses approved by advisor.

Business option requirements

Choose from:

Accounting, Advertising Management, Finance, Human Resource Management, Management and Leadership, Marketing, Real Estate, 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 the following departments: 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 your academic adviser.

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:

Food industry management requirements

- Mktg 375 Retailing (4)
- Mktg 435 Competing in the Food Industry (4)
- ISQA 458 Purchasing and Logistics Within the Food Industry (4)
- Mktg 409 Food Industry Practicum (4)
- 4 hours of directed electives, selected with the faculty adviser's approval.

Post-baccalaureate 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 a career in accounting. These recommendations include courses in accounting providing 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 post-baccalaureate student at PSU.
3. Have completed the following pre-business courses with a grade of C- or better:

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 3.0 for each of the following:
- all undergraduate credits
 - all PSU graded credits
 - all PSU graded business credits

Students who do not meet the 3.0 GPA requirements will be considered for admission only if the GPA for their most recent 8 graded credit hours at PSU is 3.00 or higher and the applicant has a minimum 2.50 cumulative PSU GPA and a minimum 2.75 cumulative GPA for all completed business courses at PSU.

Core

Actg 335 Accounting Information Systems.....	4
Actg 360 Management Accounting.....	4
Actg 381, 382, 383 Financial Accounting and Reporting.....	12
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:.....	7-8
Actg 422 Advanced Taxation	
Actg 460 Advanced Managerial 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	
Total required credits	48-49

It is recommended that PBAC Students take ACTG 281 to cover debits and credits.

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. Students who received an accounting degree outside the United States may earn the post-baccalaureate accounting certificate. Students who received an accounting degree in the United States are not eligible to earn an accounting certificate.

Graduate programs

The School of Business Administration offers six programs leading to master's degrees. The School also participates in the System Science Doctoral Program.

Master of Business Administration.

The Master of Business Administration (MBA) is an integrated graduate program focused on leadership, innovation and sustainability. Students master essential technical skills through the Value Chain of Business courses and gain in-depth understanding of the global context of business in the Foundations of Competitiveness courses. In addition, students take a series of Applied Leadership courses that are integrated based on set of managerial competencies, skills and perspectives. A highlight of the MBA program is the International Experience, which requires all MBA students participate in either a 10-14 day study abroad program or a Portland Metro-based international business experience during their MBA experience.

The MBA is designed to accommodate students with business and non-business undergraduate degrees and is best suited for those who have gained at least two years of industry experience prior to their admission date.

Students may elect to complete the MBA program in either the full-time, part-time evening or part-time online format. Students are expected to progress through the program with their assigned cohort and follow the proposed schedule of core courses. Full-time students will have to take some elective coursework during the evenings or weekends.

One of the cohorts is the online MBA. All core courses can be completed online. At least one elective course is offered online each term and online MBA students may also take elective courses offered on campus.

The Healthcare MBA. The Healthcare MBA is a joint degree program offered by Portland State University's School of Business and the Oregon Health Science University's School of Medicine. The Healthcare MBA is only offered in a part-time, three-year format. Courses are online with two required residencies per term. Students in this program learn the knowledge, skills, and tools to become effective managers in healthcare organizations. Specifically, graduates will be able to:

- Manage healthcare organizations in a professional, business-like fashion in order to enhance compassionate care
- Understand the underlying processes and systems of health care organizations in order to improve care delivery and management practices

- Manage cross-professional teams and lead profound change in healthcare organizations.

The curriculum incorporates the Institute of Medicine's six criteria (safe, effective, efficient, patient-centered, timely, efficient, and equitable) for a 21st Century healthcare system. It consists of 72 credits of courses from these thematic categories: Understanding the Healthcare Industry, Leadership and Management in Healthcare, Financial Management in Healthcare, Operations and Quality in Healthcare Marketing, Business Planning, and Strategy Application Projects and Capstone. Healthcare is thoroughly integrated throughout the curriculum, and guest speakers, cases, and examples will be primarily from healthcare. However, where appropriate, attention will be called to best practices in other industries that could be beneficial in healthcare.

Master of Science in Financial Analysis (M.S.F.A.). The Master of Science in Financial Analysis (M.S.F.A.) is a 52-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 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.

Students may take courses on a full-time (12 credits) or part-time (8 credits) schedule. Most classes are in the evening. M.S.F.A. students are admitted fall term only.

Master of Science in Global Supply Chain Management (M.S.G.S.C.M.). The MS in Global Supply Chain Management is a 52 credit hour program that can be completed in two years on a part time basis. This is an online degree that will start with a residency weekend orientation program. The program objectives are to prepare students to design and manage an effective and efficient global supply chain; understand and apply supply chain analytics; conduct demand forecasting, aggregate planning, and sales and operations planning for a supply chain; apply project management techniques in a supply chain context; understand the implications of supply chain initiatives in terms of key financial performance metrics; understand and utilize sustainability-based initiatives, including closed-loop processes, to improve the social and environmental impact of supply chains; assess fundamental dimensions of supply chain strategy, social and environmental responsibility, innovation, transformation and organizational leadership.

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.

Students will complete the M.I.M. program full-time in 15-months. For the most part, students are expected to progress through the program with their assigned cohort and follow the proposed schedule of classes. Students will have to take some coursework during the evenings or weekends. Students are admitted in fall term only. There is no admission in the winter, spring, or summer terms.

Master of Real Estate Development.

The Master of Real Estate Development (MRED) is a professional degree, training students in the areas of real estate development within the context provided by principles of sustainability, social equity, and community-based development. By its nature, real estate education is multi-disciplinary, involving finance, urban planning, architecture, law, engineering, design, appraisal, and

other disciplines. To deliver this education, the MRED degree is a joint degree of the School of Business Administration and the Toulan School of Urban Studies and Planning.

The objective for this program is to provide a unique and exceptional graduate degree that will enable students to assist in the development and management of property with an understanding of the role that such development plays in the context of broader community concerns and history, and in the context of the surrounding neighborhood and city. Students will work closely with high-level industry professionals in their classes and workshops.

The MRED degree is designed to accommodate students with a wide variety of undergraduate degrees and is best suited for students who have gained at least two years of industry experience prior to their admission date. The MRED program is designed to be completed in 18 months on a full-time basis or 36 months on a part-time basis. Students are admitted for fall term only.

Admissions & Application Requirements

The entire application process can take up to 12 weeks, so it is best to apply early, taking care to ensure everything is completed properly. An admissions coordinator will

contact you with a confirmation once your application is received at the Graduate Business Programs Office.

Applying to the Graduate Business Programs at Portland State University is a two-step process which involves applying to both Portland State University's Office of Admissions and Records and the Graduate Business Programs Office.

Dates for Fall Admission. Application and all supporting documents:

- November 1—Early Admission Decisions
 - February 1—Graduate Assistantship/Scholarship Priority Deadline
 - May 1—Priority Admission
 - August 1—Space Available Admission
- Admission to the Graduate Business Programs program is competitive, based on an applicant's ability to meet a range of application criteria. To be admitted to this program the student must complete the following:

1. A four year undergraduate degree from an accredited institution, or its equivalent, with a grade point average (GPA) of 2.75 or higher. Typically, students with a GPA less than 2.5 will need to complete 9 graduate credits with a GPA of 3.0 or higher
2. A competitive GMAT or GRE score
3. A current resume*



4. Two letters of recommendation
5. Essays of Intent
6. Interview
7. English proficiency: All graduate students, including resident aliens and citizens, whose first language is not English must meet the English language proficiency requirement prior to enrollment in academic classes. See the University policy: <http://www.pdx.edu/admissions/international-graduate-admission>.

*For the MBA, The Healthcare MBA, MRED and MSGSCM programs, the following number of years of business or professional work experience is highly recommended:

MBA: 2-3 years
The Healthcare MBA: 2-3 years
MRED: 2 years
MSGSCM: 4 years

Degree Prerequisite Requirements

Master of Science in Financial Analysis (M.S.F.A.). The M.S.F.A. degree is for students who have already completed undergraduate accounting coursework. Because this program is only 52 credits, it requires that applicants have the necessary business background that an undergraduate degree in business, economics or Post-Baccalaureate Accounting Certificate (PBAC) would provide prior to starting the program. Applicants are also expected to be proficient in computer applications and spreadsheet skills.

All applicants need to complete the following coursework prior to admission:

- Managerial and Financial Accounting
- Micro and Macro Economics
- Statistics
- Business Finance
- Intermediate Accounting Series

For further details, please visit: www.msfa.pdx.edu.

Master of International Management. For applicants who do not have a Bachelor's degree in Business Administration, the following prerequisite courses are needed:

- Managerial and Financial Accounting
- Micro and Macro Economics
- Business Finance
- Business Statistics
- Business Writing (required for applicants who receive their degree in non-English speaking countries)

Degree requirements

Master of Business Administration.

The goal of the MBA program is to develop highly effective managers and leaders. Students develop expertise in the technical areas of business, managerial competencies, and the ability to integrate technical expertise

with managerial competencies to become effective leaders in organizations. This program seeks to produce future business leaders with an innovative spirit and a commitment to social, economic and environmental stewardship. Our program is built on three key ideas that reflect the values of our Portland community: Leadership, Innovation, and Sustainability. The coursework in the MBA program is grouped into five segments: Foundations of Competitiveness, The Value Chain of Business, Applied Leadership, International Experience, and Electives.

Foundations of Competitiveness (18 credits)

The Foundations of Competitiveness segment provides students with an integrated understanding of the global and competitive challenges facing business today. The roles of innovation, creativity, global awareness, ethics and sustainability are emphasized.

Mktg 511 Pioneering Innovation (4)
Fin 511 and 512 Economics and Sustainability of the Firm I and II (2,4)
Mgmt 513 Law, Ethics and Stewardship (4)
Mgmt 511 Foundations of Strategy (2)
Mgmt 514 Integrated Strategy (2)

The Value Chain of Business (29 credits)

The Value Chain segment builds an integrated foundation of coursework and provides in-depth knowledge and applied skills related to accounting, information systems, finance, management, marketing, and operations.

Actg 511 Financial Reporting (4)
Actg 512 Managerial Accounting and Control (2)
Mktg 512 Marketing Strategy (4)
Mgmt 512 Organizational Management (4)
Fin 513 Financial Management (4)
ISQA 511 Sustainable Operations Management (4)
ISQA 513 Business Decision Tools for Managers (2)
ISQA 514 Survey Research Techniques (1) or ISQA 515 Time Series Forecasting (1)
MGMT 515 Information Systems and Technology in Organizations (4)

Applied Leadership (11 credits)

In the MBA program students' leadership skills are assessed and developed through integrated leadership courses, continuous attention to managerial competencies, skills and perspectives, and one-on-one leadership coaching. Students apply the technical business skills and leadership competencies gained through the MBA program in an intensive immersion experience midway through the program and in a team-based consulting project with a regional organization at the end of the program.

BA 521 Leadership Development and Assessment (2)
BA 522 Communications for Leaders (1)
BA 523 Executive Perspectives on Leadership (1)
BA 524 Leadership Immersion (1)
BA 525 Capstone Consulting Project (6)

BA 526 MBA International Experience (4)

A highlight of our program is the International Experience (IE) required for all MBA students.

The primary goal of the IE is to provide a first-hand experience of the opportunities and challenges of competing in a global marketplace. The IE is also designed to enhance cultural knowledge and enhance students' global mindsets gain a global perspective. The IE requires either a ten- fourteen day immersion in a foreign country or a four-eight week course in the Portland Metro region. Student must complete at least their first year of the MBA core curriculum before participating in the IE.

Electives and Concentrations (16 credits)

The MBA program offers a variety of electives that enable students to pursue their particular interests. Electives are offered across many disciplines, including accounting, entrepreneurship, finance, marketing, human resource management, social enterprise, and sustainability-based business.

MBA Concentrations permit students to build expertise in a particular area of interest and generally require students to take a set of four 4-credit courses. Information on MBA Concentrations is available on the MBA program website.

Waiver policy. 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 511, Fin 512, ISQA 511, ISQA 513, ISQA 514, ISQA 515, Mgmt 512 or Mgmt 513 may be considered for waiver. A student can waive a maximum of 13 credit hours from the courses above only, thus reducing the required number of hours in the degree program.

Finance Option. The Finance option offered in conjunction with the MBA creates an opportunity to develop a concentrated 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.

Real Estate Development Certificate: A concentration centering on issues of property development, finance and real estate, and housing economics.

Master of Science in Financial Analysis (M.S.F.A.). Successful completion of the M.S. in Financial Analysis requires 28 credits of core courses, 16 credits in a specialization track, and 8 credits of electives.

Credit

CORE 28
Actg 553 Financial Statement Analysis (4)

- Actg 560 Professional Ethics and Public Interest (2)
- BA 522 Communications for Leaders (1)
- BA 523 Executive Perspectives on Leadership (1)
- BA 525 Capstone Consulting Project (6)
- Fin 545 Hedging and Risk Management (4)
- Fin 551 Financial Management for Financial Analysts (4)
- Fin 553 Valuation and Analysis(4)
- Mgmt 511 Foundations of Strategy (2)

SPECIALIZATION TRACKS (Choose One)..... 16

Corporate

- Actg 552 Strategic Cost Management (4)
- Fin 511 Economics and Sustainability of the Firm (2)
- Fin 531 Financial Institutions (2)
- Fin 556S International Financial Management (4)
- Fin 565 Corporate Financial Strategies (4)

Investments

- Fin 511 Economics and Sustainability of the Firm (2)
- Fin 531 Financial Institutions (2)
- Fin 552 Investments (4)
- Fin 554 Alternative Investments (2)
- Fin 573 Investment Analysis and Portfolio Management (4)
- Fin 574 Portfolio Management: Issues and Performance Assessment (2)

Public Accounting

- Actg 525 Professional Accounting Research (4)
- Actg 527 Advanced Tax Topics (4)
- Actg 565 Current Topics in Global Financial Accounting (4)
- Actg 593S Advanced Auditing (4)

Electives..... 8

See MSFA program website <http://www.pdx.edu/gradbusiness/> for a list of approved electives. Other courses, including study abroad, can qualify as elective credit if approved by the program director.

Master of Science in Global Supply Chain Management (M.S.G.S.C.M.). The goal of the Master of Science in Global Supply Chain Management (M.S.G.S.C.M.) is to prepare global leaders in developing strategies that support markets and innovation in a sustainable and efficient manner. In the M.S.G.S.C.M. program students will gain knowledge in how supply chains are integrated into a full spectrum of product and service strategies including; new product innovation, markets and channels, sourcing, lean operations, project management, logistics, analytics, and sustainable end-of-life closed loop processes.

The proposed MS Global Supply Chain Management degree will have a total of 52 student credit hours and be completed in two years on a part-time basis.

Year 1

- GSCM 511 Principles of Strategic Principles of Strategic Global Sourcing (4)
- GSCM 512 Global Supply Chain Managerial & Cost Accounting (4)
- GSCM 513 Principles of Strategic Global Logistics (4)
- GSCM 522 Global Leadership & Ethics in Supply Chain Management (2)
- GSCM 516 Global Supply Chain Forecasting and Production Planning (4)
- GSCM 520 Global Supply Chain Strategy (2)

Year 2

- GSCM 515 Global Case Studies in Supply Chain Management (4)
- GSCM 517 Global Supply Chain International Field Study (4)

- GSCM 518 Global Supply Chain Project Management (4)
- GSCM 519 Global Contract Negotiations (4)
- GSCM 514 Reverse Logistics and CLSC (4)
- GSCM 521 Enabling the Global Supply Chain through Information, Systems and Technology (4)
- GSCM 525 Supply Chain Capstone Consulting Experience (4)
- GSCM XXX Elective (4)

Total 52

Master of International Management (M.I.M.).

The M.I.M. program offers a 15-month full-time format and an intense learning experience reflective of international business today. The M.I.M. degree focuses on Asian business. 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.

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. Classes are held at PSU's main campus as well as the Oregon Executive MBA facility in downtown Portland.

Specialization options. To meet the growing corporate demand for specialized skills, the M.I.M. offers specialization tracks. Students can acquire in-depth knowledge in one of three key management areas: international corporate finance, global marketing, or global supply chain management. General M.I.M. requirements include core program credits plus the language requirement. Furthermore, students will produce the international business project in their chosen area of specialization.

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 through the M.I.M. prerequisite program. The M.I.M. prerequisite program is a summer 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.

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 are listening, followed by speaking, reading, and writing. The content of the language focuses on business and social situations, concentrating on relevant vocabulary.

Field study in Asia. Students travel to China, Japan, and VietNam 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 different Asian countries.

Credit

Core Courses..... 56

- MIM 506: International Business Research Project (4)
- MIM 507: Age of Pacific Lecture Series (1)
- MIM 509: Global Business Immersion (1)
- MIM 512: Global Leadership and Ethics (2)
- MIM 513: Pacific Rim Economies, Trade & Financial Markets (3)
- MIM 514: Global Managerial and Cost Accounting (2)
- MIM 515: Global Contemporary Marketing (4)
- MIM 516: Contemporary Pacific Rim and World Affairs (4)
- MIM 517: Accounting for Global Enterprises (4)
- MIM 522: Global Business Communications (2)
- MIM 527: Advanced Cross-Cultural Communications I (1)
- MIM 528: Advanced Cross-Cultural Communications II (1)
- MIM 535: Global Marketing Research and Innovation (3)
- MIM 558: Comparative Operations Management (4)
- MIM 564: Global Human Resource Management (4)
- MIM 568: Managing Information Technology Globally (2)
- MIM 574: International Corporate Finance and Investment (4)
- MIM 577: International Business Negotiations (3)
- MIM 579: Asia Field Study (3)
- MIM 588: Global Business Strategy (part 1) (2)
- MIM 589: Global Business Strategy (part 2) (2)

Language..... 7

- MIM 505: Foreign Language

Specialization Courses..... 12

- Global Supply Chain Management: MIM 524: Global Sourcing and Supply (4)
- MIM 534: Global Logistics Management (4)
- MIM 544: Integrated Global Supply and Logistics Management (4)

Global Marketing:

- MIM 510: Global Entrepreneurship (4)
- MIM 545: Global Selling (4)
- MIM 575: Marketing in Asia and the Pacific Rim (4)

International Corporate Financial Management:
MIM 571: Global Strategic Cost Management (4)
MIM 572: Global Business Valuation (4)
MIM 573: Cases in International Corporate
Financial Management (4)

See Web site for course descriptions of
Specialization courses www.mim.pdx.edu.

Master of Real Estate Development. The MRED program is designed to be completed in three years on a part-time basis or two years on a full-time basis. Students will develop their skills in three areas: urban theory, finance and policy, and project development, leading to the Real Estate Development Workshop culminating experience.

Credit

Sustainable Urban Development	
USP 527: Downtown Revitalization	3
USP 569: Sustainable Cities and Regions	4
USP 596: Affordable Housing Finance.....	3
USP 611: America's Changing Neighborhoods.....	3
USP 612: Community, Planning, and Ethics	3
Finance, Markets, and Law	
RE 521: Real Estate Finance I	4
RE 522: Real Estate Finance II	4
RE 548: Real Estate Market Analysis	3
RE 573: Housing Economics	4
RE 538: Real Estate Law	3
Project Development	
USP 523: Real Estate Development I	4
USP 546: Real Estate Development II	4
USP 624: Development Project Design	3
RE 531: Executive Perspectives on Real Estate	1
RE 562: Real Estate Development Workshop	4
Electives	18
Total	68

Real Estate Development Workshop.

The culminating experience of the MRED is RE 562 Real Estate Development Workshop. Students in that class form a team that produces a development proposal for a multi-block site in a major city, advised by local industry professionals. Each team will produce a professional report and present their findings before an audience of real estate professionals.

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 198.

Centers and institutes

Center for Executive and Professional Education (CEPE)

503-725-4820

www.pdx.edu/cepe

The rapid and complex changes occurring today's business world continue to place increasing demands on working professionals. Whether you are looking to build professional business skills or your organization is looking to boost performance and profitability, CEPE can help make it happen. Our certificate programs, courses, workshops, and seminars will ensure that you get the training you need to advance your career and meet your personal goals. We also offer customized training programs to organizations who want to bring our curriculum onsite.

Certificate Programs

Each CEPE program is comprised of a series of courses offering comprehensive content and real-world skills that are immediately applicable in the workplace. Courses are focused, intensive, and interactive, and provide a unique opportunity to learn, share experiences, and network with peers. Faculty

Our instructors include dynamic industry experts and School of Business faculty. They have deep knowledge of their subjects and understand how adults learn. Teaching methods include lecture, small group project work, case studies, and hands-on activities.

Admission Requirements

There are no prerequisites, degree requirements, admissions procedures, or lengthy application forms. Students are not required to be admitted to PSU. Courses are offered during the day, evenings and/or on Saturdays, and are between one day and 8 weeks long. Academic credit is available for some courses for an additional fee.

Advising

Contact the appropriate program manager for an advising appointment. See the website for contact information.

Programs

Business Analysis
Business Communication
Craft Brewery Business Certificate
Designing and Developing for Mobile
Digital Marketing Strategies
Human Resource Management
Introduction to Web Development
Lean Practitioner
Organizational Development
Project Management
Six Sigma
Tax Practitioners Institute

Courses

Accounting

Courses with an asterisk () are not offered every year.*
For information on the accounting option requirements, see page 104. All 300- and 400-level courses require admission to the School of Business Administration; graduate courses require admission to the graduate programs.

Actg 281

Accounting Mechanics: Debits and Credits (1)
Focus on the mechanics of the accounting cycle using an interactive, online, problem-oriented learning system. Specific topics include use of T-accounts, rules of debits/credits, journal entries, adjusting and closing entries, and subsequent preparation of financial statements. Prerequisites: BA 211.

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 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.

Actg 381, 382, 383

Financial Accounting and Reporting I, II, III (4, 4, 4)
Comprehensive study of the principles, conventions and postulates of financial accounting. Appropriate preparation of GAAP financial statements and financial disclosures, including exposure to the judgment inherent in financial reporting. Considers information requirements and expectations of users of financial statements. International financial accounting standards will be considered where appropriate. Specific focus on the responsi-

bility of accountants for maintaining professional accountability to the public interest in the face of institutional pressures. Courses must be taken in sequence. Prerequisites: Actg 381 for Actg 382; Actg 382 for Actg 383.

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. Prerequisites: Actg 381.

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 (2)

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.

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.

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. An introduction to environment performance reporting also will be provided. Ethics are essential in accounting and provide guidance on all aspects of financial reporting topics covered in this course.

Actg 512

Managerial Accounting and Control (2)

Course participants study traditional managerial accounting issues, including operational budgeting, cash flow analysis and cost accounting. In addition, the course will consider financial models used in analyzing the economic viability of new products and services. Concurrent or Prerequisite: Actg 511.

Actg 525

Professional Accounting Research (4)

This course covers the research and documentation methods used in professional practice by accountants. Topics generally include use of the research tools and methods used by professional accountants, including documenting and communicating research.

Actg 527

Advanced Tax Topics (4)

The study of federal income tax law applicable to common business structures through the use of case studies. Topics generally include the tax treatment of business formation, operations, distribu-

tions, liquidations, mergers and acquisitions.

Applying tax laws, performing analyses, and making judgments are critical in this case course.

Prerequisites: Actg 522 or consent of instructor.

***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 concurrent enrollment or Fin 513.

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 565**Current Topics in Global Financial Accounting (4)**

Covers current complex financial accounting issues faced by corporations operating within a global context. Because of today's rapidly changing financial accounting environment, this course will take an adaptable view of topics covered, monitoring recent regulatory issues to include timely complex issues that must be understood by today's financial accounting professional. Prerequisites: admission to the MSFA program.

Actg 601**Research (Credit to be arranged.)****Actg 607****Seminar (Credit to be arranged.)****Business Administration**

All 300- and 400-level courses require, except business minor courses, admission to the School of Business Administration; graduate courses require admission to the graduate programs.

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.

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.

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.

†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.

† Courses in the minor may not be used to satisfy major requirements, except for BA 101.

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.

†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.

† Courses in the minor may not be used to satisfy major requirements, except for BA 101.

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.

†BA 326**Working with People for Business Minors (4)**

Essential topics in management and business communications. Focuses on the management 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.

† Courses in the minor may not be used to satisfy major requirements, except for BA 101.

†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.

† Courses in the minor may not be used to satisfy major requirements, except for BA 101.

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.

†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.

† Courses in the minor may not be used to satisfy major requirements, except for 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.

BA 407/507**Seminar (Credit to be arranged.)**

Seminars in selected cross-functional and integrative business topics.

BA 423**Executive Perspective (1)**

This course provides students the opportunity to interact and learn directly from executives at for-profit, not-for-profit and government organizations. Students will listen to and discuss the concepts and practices of leadership as it relates to the professional experiences of the executives.

BA 495**Business Strategy (6)**

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, through engagement with community partners, apply concepts and theories related to the formulation and implementation of business/organization strategies. Students join an interdisciplinary team; pool their knowledge, skills, and interests; use strategy to address a problem or concern of the community partner. Emphasis on multiple functions and perspectives to understand diverse management and stakeholder interpretations, conceive integrative solutions, and address social and organizational outcomes. Prerequisites: BA 301, 302, 303, 311, 325, 339, and 385. Priority to graduating seniors who have applied for graduation. Required class standing of senior or post-bac.

BA 521**Leadership Development and Assessment (2)**

This course is the first stage for the development of leadership competencies in the MBA+ program. 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 leadership strengths and weaknesses. During the term the students will be involved in various activities to assess and develop their interpersonal, communication, problem solving, and systems thinking competencies. Pass/no pass course, concurrent enrollment in Mktg 511 is required.

BA 522**Communications for Leaders (1)**

This course focuses on building effective communication skills, including writing, speaking and listening. Students will learn how to create and engage in clear and well-structured communications – both oral and written. Students will be introduced specific techniques that students can use to increase their effectiveness as communicators, engage their audience and respond to 'expected' and 'unexpected' questions that arise in a way that is authentic, collaborative and influential.

BA 523**Executive Perspectives on Leadership (1)**

This course provides students that opportunity to interact and learn directly from executives at for-profit, not-for-profit and government organizations. Students will listen to and discuss the concepts and practices of leadership as it relates to the professional experiences of the executives.

BA 524**Leadership Immersion (1)**

A business simulation experience designed to assess students' technical and leadership skills. This course can only be taken as a pass/no pass grading option. Prerequisite: Fin 513.

BA 525**Capstone Consulting Project (3-6)**

Under the direction of a faculty member, students work in teams over two terms to apply MBA knowledge, skills and leadership competencies to an actual organizational problem in a consulting framework. This course requires two consecutive terms to complete. MBA Prerequisites: Mgmt 511, Fin 513 and Mktg 512; and BA 524 (may be concurrent); and completion of at least 37 hours of the MBA core sequence. MSFA prerequisites: Mgmt 511, Fin 551 and Fin 553.

BA 526**MBA International Experience (4)**

The MBA International Experience provides the opportunity for students to study international business and intercultural topics and gain hands-on experience in a different country or in the Portland Metro region. Locations and course topics are determined based on the strategic priorities of the MBA program. International Experiences conducted in different countries require approximately two weeks overseas. International Experience conducted in the Portland Metro region will be offered in four to eight week formats. Prerequisites: Students will need to have completed the first year of their MBA program in order to participate in the MBA International Experience.

BA 548**Special Topics in Business (4)**

The courses offered under this number cover a range of specialized topics in business such as Product Design and Stewardship for Global Corporations, Sustainability Metrics in Business, Cross-Sector Partnerships for Sustainable Enterprise, Global Marketing Research, Marketing in Asia, Global Marketing, Global Human Resource Management, etc. Only open to graduate students of the School of Business Administration. May be repeated with different topics; maximum of 12 credits may be applied to the master's degree.

Finance

For information on finance option requirements, see page 105. All 300- and 400-level courses require admission to the School of Business Administration; graduate courses require admission to the graduate programs.

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 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 336*Principles of Risk and Insurance (3)**

A study of the principles and practices of life, fire, casualty, marine, and social insurance.

Fin 352**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 and stocks, 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: BA 303.

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.

Fin 404/504**Internship (Credit to be arranged.)****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 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: Actg 381, 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 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, Actg 381 for Fin 456; 551 or 513 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: Actg 381, Fin 319 and 449.

**Fin 473/573
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 strongly recommended two-course sequence. Offered fall, winter, and spring terms. Prerequisites: Fin 319, Fin 449, and instructor approval for Fin 473; Fin 551 or Fin 513 for Fin 573; recommended Fin 553 at least concurrently for Fin 573.

**Fin 474/574
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 two-class course sequence. Offered winter, spring, and summer terms. Prerequisites: Fin 473 for 474, Fin 573 for 574.

**Fin 503
Thesis (Credit to be arranged.)**

**Fin 511, 512
Economics and Sustainability of the Firm I, II (2, 4)**

Introduction to the basic ideas in contemporary economics. Concepts covered include how firms and individuals make economic decisions, how markets function to allocate resources, how market structure and corporate governance affects decision making, and how strategic interactions between firms influence pricing decisions. The course will introduce students to key concepts of macro-economics, including monetary and fiscal policies and the relationships between inflation, interest and unemployment rates. Building from the fundamentals of economic theory, the course also examines how economics is linked to ecosystems and the roles of the business and government sectors in fostering economic value creation and ecosystem stewardship. Fin 511: deals with defining what financial assets are and how they are priced in the marketplace. Understanding the role of government with respect to Fiscal policy and the role of regulation and subsidies in moving market behavior as well as the role of the Federal Reserve and what it tries to accomplish through monetary policy with regard to inflation, exchange rates and full employment goals. The course will also look at macro economic theories pertaining to market interest rates and how the Fed's open market committee works. Fin 512:

deals with a continued focus on creating a sustainable business structure as well as an in-depth look at applied microeconomics of the firm. Specifically looking at the underlying economic theories of supply and demand, elasticity and individual and market demand functions. The class also covers the nature of industry and explore competitive, monopolistically competitive, oligopolistic and monopolistic market structures. Pricing strategies and the economics of information are also covered. Fin 511 is a pre-requisite.

**Fin 513
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. Ethical standards are an essential guide to sound financial decision-making and long term value creation and are integrated throughout the course. Prerequisites: Fin 511, Fin 512 and Actg 511.



Fin 531**Financial Institutions (2)**

Introduces the role financial institutions play in financial markets, the structure of institutions and how they facilitate economic growth through the transfer of capital. The course then analyzes how institutions measure and manage the unique risks that they are exposed to through their ordinary operations. Prerequisites: Fin 511.

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 513 or 551.

Fin 551**Financial Management for Financial Analysts (4)**

Gateway course to the Master of Science in financial analysis. 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 provides. Topics considered include cash flow analysis, risk determination, valuation, working capital management, and financing. Graduate credit cannot be earned for both Fin 513 and 551. Prerequisite: admission to the Master of Science in financial analysis program.

Fin 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 551 or Fin 513.

Fin 553**Valuation and Analysis (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 513; competency with electronic spreadsheets.

Fin 554**Alternative Investments (2)**

Introduces the role financial institutions play in financial markets, the structure of institutions and how they facilitate economic growth through the transfer of capital. The course then analyzes how institutions measure and manage the unique risks that they are exposed to through their ordinary operations. Prerequisites: Fin 511.

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. Prerequisites: Fin 551 or concurrent enrollment or Fin 513.

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, dividend policy, working capital management, growth through mergers, and leasing. Emphasis is placed on the further development of problem solving capabilities. Prerequisite: Fin 551 or 513.

Fin 565**Corporate Financial Strategies (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 513.

Global Supply Chain Management

GSCM 511**Principles of Strategic Global Sourcing (4)**

Overview of planning strategies and tactical execution for sustainable operational sourcing in a global environment. Topics to be reviewed include; locating and qualifying international suppliers, the strategies regarding outsourcing / off-shoring, supplier & operational metrics and strategies, establishing and maintaining relationships, e-procurement, new product introduction, and quality systems with selected suppliers.

GSCM 512**Global Managerial and Cost Accounting (4)**

The course covers global managerial & cost accounting issues, and focuses on the use of accounting information within the multinational firm. In addition, the course will consider financial models used in analyzing the economic viability of new products and services. Students will also be exposed to activity based costing, standards and variance analysis, and inventory valuation.

GSCM 513**Principles of Strategic Global Logistics (4)**

This course deals with the development of strategies supply chain management involving the transfer of goods and services across national boundaries. Included are studies of inventory and ware-

house 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, rail, truck, and sea transportation.

GSCM 514**Reverse Logistics and Closed Loop Supply Chain (4)**

The increasing globalization of suppliers and customers has increased concern with the issues of sustainable and responsible management across global supply chains. In this course students will explore the main risks, opportunities and practices we now see in global supply chain management from both conceptual and practical perspectives on sustainable practice. Students in this course will engage in applied studies and learn from academics and practitioners about the current challenges in this critical business arena.

GSCM 515**Global Case Studies in Supply Chain Management (4)**

The final course in the Supply and Logistics Specialization integrates all of the concepts contained within the previous three classes. Global Supply and Logistics planning and strategy development is the primary focus. This is a case study based course where each week students are expected to analyze and prepare supply and logistics cases in an international setting. Emphasis is on developing analytical and problem-solving skills and generating the quantitative and qualitative information necessary to make superior managerial decisions.

GSCM 516**Global Supply Chain Forecasting and Production Planning (4)**

The objective of this course is to familiarize students with the major tools used for manufacturing planning and control. To this end, we will perform an in-depth analysis of integrated operations management systems with emphasis on operations planning and control, material requirements planning, master scheduling, forecasting, capacity planning, just-in-time and related topics. These tools will be covered with more detail than previous SCM courses and we will examine how the various components fit together to form a complete system.

GSCM 517**Supply Chain International Field Study (4)**

Economic globalization can provide enormous strategic benefits (risks) by coordinating operations located in different countries. Today's producers must coordinate international material flow, produce in multiple countries, and deliver new products to customers at ever increasing speed and on-time. This course will provide students with an "on the ground" opportunity to explore the challenges in globalized operations strategies.

GSCM 518 Global Supply Chain Project Management (4)

This course emphasizes how to implement a project within the time, cost, scope, and quality success criteria that influence supply chain strategies. The spectrum of project management in supply chain includes the participation in new product development, sourcing of supply, the transformation process, logistics, and planning for the return of materials after the life cycle is complete.

GSCM 519**Global Supply Chain Negotiations (4)**

The purpose of this course is to analyze the negotiation challenges faced by the global supply chain professional. Thus the content is focused on contract negotiation, Uniform Commercial Code, UN Convention on Contracts, and e-procurement. The course will encourage development of these skills experientially by emphasizing relationships and a total cost perspective.

GSCM 520

Global Supply Chain Strategy (2)

In this course students develop the ability to conceptualize, design, and implement supply chains aligned with product, market, and customer characteristics. Students assess how internet technologies, dynamic markets, and globalization are impacting supply chain strategies and practices, including: logistics, inventory and risk management, procurement and supply contracting, product and process design, and revenue channels.

GSCM 521

Global Information, Systems and Data Analytics (4)

The premise of this course is that supply chain management must understand and assess the information resources and technologies that underpin the life cycle of goods and services. Information is generated at each stage of the supply chain and crucial to the performance is where and how to store, analyze and act upon its insights.

GSCM 522

Global Leadership and Ethics in Supply Chain Management (2)

This course provides students with a solid understanding of the concepts linking leadership to global and social systems, international organizational development, and the connection between leadership, systems, and global supply chains. Global leadership is studied from four perspectives: the virtual team leading across borders and organizations, ethical and cultural ramifications of leadership, and the ethical traits of global leaders and followership, and your own value system and its place within a global supply chain organization.

GSCM 525

Supply Chain Capstone Consulting Experience (4)

The course provides students the opportunity to have a significant, hands-on experience that builds upon the foundation of the core of the GSCM program. Students, operating as part of a consulting team, work closely with a client to help to solve a supply chain oriented business problem. The scope of the project is 600 hours of research as a group on the behalf of the client.

Information Systems

These ISQA courses constitute the Supply and Logistics Management option. For information on supply and logistics management option requirements, see page 105. All 300- and 400-level courses require admission to the School of Business Administration; graduate courses require admission to the graduate programs..

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 (Credit to be arranged.)

Field work involving the practice of professional activities away from campus. Prerequisite: consent of instructor.

ISQA 410

Selected Topics (Credit to be arranged.)

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

Industrial Transportation and Freight (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 431

Transportation Regulation (4)

Evolution of transportation law in the U.S., including examination of case law as precedent. Designed for those planning careers in transportation, logistics or supply chain management. Prerequisite: BA 339.

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 440

Governmental Procurement (4)

Introduction to theories and practices of governmental procurement. Major aspects of purchasing within public agencies in the United States with special emphasis on the Oregon statutes and administrative rules. Differences between public and private purchasing processes. Federal purchasing processes. Prerequisite: BA 339.

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, manage-

ment, including the impacts of organizational strategy, structure and culture on the development and execution of projects.

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 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

Sustainable Operations Management (4)

Introduction to the concepts and analytic methods that are useful in understanding the management of a firm's operations and supply chain. The aim of the course is to (1) familiarize students with the basic language, concepts, insights and tools of operations and supply chain management, (2) demonstrate principles and methods for integrating sustainability into an organization using concepts such as the Toyota Production System, cradle-to-cradle principles, green procurement, and life cycle analysis, and (3) explore the relationship between sustainable supply chains and local and global economies in terms of environmental impact and social contribution.

ISQA 513

Business Decision Tools for Managers (2)

This course builds directly from the on-line Essentials of Business Decision Tools completed prior to admission to the MBA+ program. Students will gain an in-depth understanding of the fundamental theories, concepts, and principles

of quantitative analysis. Topics covered include estimation, hypothesis testing, ANOVA and regression analysis. Prerequisites: Pre-stats online module.

ISQA 514

Survey Research Techniques (1)

Focus on business applications for designing, administering and analyzing a survey, such as for market research. This section will build directly from coursework in Mktg 511, Mktg 512 and ISQA 513.

Prerequisites: ISQA 513

ISQA 515

Series and Forecasting Techniques (1)

Focus on business applications that incorporate Time Series and Forecasting Techniques, including multiple regression procedures. This section will build directly from coursework in FIN 513 and ISQA 513. Prerequisite: ISQA 513.

Management & Leadership

For information on the management & leadership option requirements, see page 105. All 300- and 400-level courses require admission to the School of Business Administration; graduate courses require admission to the graduate programs.

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 428

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 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 512 for Mgmt 547.

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 512. Students must be declared as HRM option in the University database to register for this class.

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. Prerequisites: BA 302.

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 512. Students must be declared as HRM option in the University database to register for this class.

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 512. Students must be declared as HRM option in the University database to register for this class.

Mgmt 493

Human Resource Strategy (4)

This is the final course in the Human Resource Management sequence. Uses case analysis, outside speakers, and a comprehensive project to provide an in-depth, analytical study of human resource management and the tasks of the modern human resource executive. Focuses on transforming the HRM function for the modern corporation. Emphasizes the strategic aspect of HRM while studying executive-level decision making in all aspects of HRM. Preference on waiting list will be given to HRM-option students. Prerequisites: Mgmt 351, Mgmt 461, Mgmt 471.

Mgmt 503

Thesis (Credit to be arranged.)

Mgmt 511

Foundations of Strategy (2)

To survive and thrive in the global economy, organizations rely on leaders to analyze the competitive landscape, cultivate essential capabilities, and implement effective business models. These are the key contributors to a successful strategy. This course imparts the analytical skills and tools necessary for leaders to assess the external environment and develop the internal capabilities required for devising and implementing strategies that will contribute to sustained competitive advantage.

Mgmt 512

Organizational Management (4)

Course participants explore organizational behavior, leadership, and human resource factors that contribute to long term value creation for the

organization. Leadership emphasizes the creation and maintenance of relationships with key internal stakeholders as part of building organizational effectiveness, social responsibility and environmental stewardship into organizational systems. Organizations are studied from three perspectives: the individual, the work team, and the organizational system. Topics include motivation, performance assessment, creative problem solving and organizational learning, compensation, staffing, employee development, and organizational design and change.

Mgmt 513
Law, Ethics and Stewardship (4)

The course is designed to provide students with an understanding of how political, social, legal, regulatory, and environmental issues impact business organizations within a global context. Topics covered include legal issues and compliance environments, business ethics, corporate social responsibility and the public policy process. Students gain an understanding of the relationships between values, ethics and legal and public policy environments, are able to aspire to high ethical standards, and build long-term stewardship of financial, societal and natural resources into an organization's strategy and operations.

Mgmt 514
Integrated Strategy (2)

This course provides an integrative, capstone experience focused on strategy development and implementation in international and domestic organizations. Case analysis and advanced analytical frameworks are used to develop the skills and judgment necessary to provide strategic direction to organizations. Both business-level and corporate-level strategy development will be undertaken leading students to solidify their strategic mindset, which will be applicable across a broad range of organizations. Prerequisites: Mgmt 511, Fin 513.

Mgmt 515
Information, Systems and Technology in Organizations (4)

Course participants explore information, systems, and technology from a managerial responsibility perspective. This focus reflects prevailing industry expectations that business people be involved in decision-making and management related to information resources and enabling technologies. To this end, we consider strategic and operational initiatives in such areas as information management and analytics, information-technology governance, IT portfolio management, package and service selection, project management and system implementation, inter-organizational partnerships and sourcing, and ethical concerns related to technology design and information use. Managerial responsibility for social and environmental impacts associated with the management of information, systems and technology are explored.

Mgmt 531
The Entrepreneurial Mindset (4)

The global economy requires an entrepreneurial mindset. Working on their own idea or with a local entrepreneur, students will: assess their appetite for entrepreneurship; create a venture proposal to effectively attract stakeholders: employees, partners, investors, and customers; understand venture types and their lifecycles to evaluate entrepreneurship as a career option.

Mgmt 533
Alliances and Acquisitions (4)

Strategic alliances have become an essential element in growing a business. This course will study the various types of alliances such as acquisitions, joint ventures and licensing. It will cover best practices (what works) as well as unsuccessful practices (what doesn't work). Case study analysis and use of current events ("Alliance-in-the-News") will illustrate these practices. The course will pay particular attention to value creation.

***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 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 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 512.

***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 512.

***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 512.

Mgmt 556
Organizational Politics and Power (4)

Incorporates 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 effective relationships; ethical power use. Prerequisites: Mgmt 512.

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 Fin 513. Graduate credit cannot be earned for both Mgmt 562 and Mgmt 511/514.

Mgmt 601
Research (Credit to be arranged.)

Mgmt 607
Seminar (Credit to be arranged.)

Mgmt 698
Ecosystem Services Valuation: An Integrated Assessment (4)
Explore environmental, social and economic theories of valuation, quantitative and qualitative methods for incorporating the values into ecosystem service management decisions, novel approaches for integrating each type of values into comprehensive measures, and applications through interdisciplinary team projects. This is the same course as Ec 698; may only be taken once for credit.

Marketing

For information on marketing option requirements, see page 105. All 300- and 400-level courses require admission to the School of Business Administration; graduate courses require admission to the graduate programs.

Mktg 199
Special Studies (Credit to be arranged.)

Mktg 338
Professional Selling (4)
A overview of personal selling as an element of the marketing function for both industrial and retail professional sales with an emphasis on the sales process including prospecting, approaching, presenting, negotiating, closing and follow-up. Topics include sales careers, sales strategies and tactics, buyer behavior as part of individual and group purchase processes, establishing and building customer relationships and the role of selling in the marketing effort. In addition to formal theoretical coursework, students practice sales skills in role plays, presentations and other exercises requiring practical application of selling theory.

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 (4)**

Principles of public relations in contemporary America, with emphasis on the role of public relations in business.

**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 technology and databases in understanding the marketplace is explored. Prerequisites: BA 311; six credits in psychology, sociology, or anthropology in any combination recommended.

**Mktg 373
Merchandising Management(4)**

This course focuses on the specific strategies and tactics used by retail, wholesale, and manufacturing industry professionals to forecast, plan, execute, and achieve sales, inventory, turnover, gross margin, and profit objectives. Hands-on- practice will build real-world skills and insight and course will include contributions from industry professionals. Prerequisites: BA 311.

**Mktg 375
Retailing (4)**

Focuses on the retail distribution of food and consumer goods to consumers with emphasis on the dynamic nature of the retail environment and how changes in consumer demographics, new technology, new competitive forms, and the Internet are revolutionizing the retail industry. Topics include: Staffing, management and retail operations, category management, web marketing, merchandising, and promotion. Prerequisite: BA311.

**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 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 448
Digital Media Planning and Design (4)**

Covers the use of digital communication channels (internet, mobile, etc.) to strategically reach key audiences and foster consumer relationships. Topics include interactive media planning principles, use of digital media as PR tools, online metrics to measure marketing/advertising effectiveness, and basics of web site content construction (navigation, atmospherics, etc.). Prerequisites: Mktg 340 and Mktg 441.

**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 wide-spread 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 512 for 562.

Mktg 463
Service Innovation (4)

This course is focused on the issues that confront marketing managers as they address the development of innovative services and service-oriented marketing strategies. It will cover new service design and development, standards, strategy, delivery, and service management with special attention to the technology-enablement of service business models. Prerequisites: BA 311.

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 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 521 is required.

Mktg 512
Marketing Strategy (4)
This course builds directly from the Pioneering Innovation course. Entrepreneurial as well as medium- and large-size organizations are considered in terms of how they develop and implement a marketing strategy. A key focus is to develop the necessary market planning and analytical skills. Specific topics include the role of marketing in a competitive environment, market segmentation, selection of target markets, development of product, pricing, packaging and distribution strategies. In addition, students will learn about social and 'green' marketing strategies and the impact of technology on marketing strategies and processes. Prerequisites: Mktg 511.

Mktg 534
Advertising and Brand Management (4)
Explores how marketing communications support strategic brand management in a changing media and consumer landscape. Examines changes in technology, consumer behavior and brand significance and their effects on the advertising industry. Course emphasizes strategic thinking and creativity, and helps prepare students to effectively contribute to brand building within a firm.

Mktg 548
New Products Management (4)
Reviews the product innovation management process. Major topics include opportunity identification, concept generation, project evaluation, design and development, product launch strategies, and product management. Special consideration will be given to aligning product development with technology-driven, high-growth market opportunities.

***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 512.

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 creation, 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 infor-

mation from internal and external business environments. Considers the evaluation and appropriate use of information, information sources and research services. Prerequisite: ISQA 513, Mktg 512.

***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 512.

***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 512.

Mktg 601
Research (Credit to be arranged.)
Mktg 607
Seminar (Credit to be arranged.)

Master of International Management

MIM 507
Age of Pacific Seminar Series (1)
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 509
Global Business Immersion (1)
Two-day intensive and practical application of international business and cross-cultural skills.

MIM 512
Global Leadership and Ethics (2)
This course provides students with a solid understanding of the concepts linking leadership to global and social systems, international organizational development, and the connection between leadership and systems. Global leadership is studied from three perspectives: the virtual team leading across borders and organizations, ethical and cultural ramifications of leadership and follower-ship, and to emphasize leadership's impact on the social, environmental and economic context in which they operate.

MIM 513
Pacific Rim Economies, Trade, and Financial Markets (3)

The course surveys current economic trends among the Pacific Rim economies, focusing on the challenges facing both developed and developing countries. Areas of focus include the principles of international trade, balance of payments, environmental impacts of policies, financial institutions and markets which all effect business between the Pacific Rim and the United States.

MIM 514
Global Managerial and Cost Accounting (2)

The course covers global managerial and cost accounting issues; it also focuses on the use of accounting information within the multinational firm. In addition, the course will consider financial models used in analyzing the economic viability of new products and services. Students will also be exposed to activity based costing, standards and variance analysis, and inventory valuation.

**MIM 515
Global Contemporary 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)**

This course offers a broad sweep of the history, politics, economics, and foreign relations of the Asia Pacific Rim countries to enhance understanding of current business attitudes and systems across the region. Linking historical events with contemporary issues, the course will help predict how the region will shape the global business community into the future.

**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 521
Sustainability Metrics in Business (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 business practices.

**MIM 522
Global Communications (2)**

Focus on a crucial global business leadership skill: the ability to inform and persuade across cultures through speaking, writing, and listening. Topics include reading, internalizing fundamental concepts, discussing communication challenges, and practicing communication skills. The course will use a workshop format focused on experiential and collaborative learning.

**MIM 524
Global Sourcing and Supply (4)**

This class is an overview of planning strategies and tactical execution for sustainable operational sourcing in a global environment. Topics to be reviewed include; locating and qualifying international suppliers, the strategies regarding outsourcing / off-shoring, supplier & operational metrics and strategies, establishing and maintaining relationships, e-procurement, new product introduction, and quality systems with selected suppliers.

**MIM 527, 528
Advanced Cross-Cultural Communications I, II
(1, 1)**

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 531
Product Design and Stewardship for
Sustainable Enterprises (4)**

Takes the view that to maximize a company'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 Marketing Research and Innovation (3)

This course concentrates on how to manage an innovation process, from new opportunity identification to market introduction, with emphasis on integrating appropriate market input at each step. Students will understand how to approach the identification of new opportunities, the rapid evaluation / prioritization of these opportunities, and management of the development and introduction processes.

MIM 538

Global Comparative Operations Management (4)

The changing international environment in global operations will be reviewed through: comparative study of process selection, facilities design, operations planning and control, supply logistics, process best practices, technology management, international sustainable supply chains and customers, quality management, and performance measurement. The importance of operation's involvement from new product introduction to the sustainable end of a product lifecycle will be emphasized.

MIM 541

Global Social Innovation and Entrepreneurship (4)

This introductory course will apply the concepts of social entrepreneurship and social enterprise as a for-profit or a not-for-profit business model. It examines a range of ownership and market orientations and the role of stakeholder engagement. Students will examine social intrapreneurships within established companies and conduct real world research projects with social entrepreneurs. Working with a client company, they will investigate a pressing business problem and provide recommendations; alternatively students will develop a mini business plan for a new social venture and acquire techniques and roadmaps for identifying, analyzing and developing opportunities for market-based solutions to social problems.

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 gen-

erating 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 551

Managing and Leading International Non-Governmental Organizations (4)

Introduction to international non-governmental organizations and the contributions they make to the larger society. Develops an overall understanding of the relationship of strategic international NGO management and program effectiveness. Step-by-step development of a strategic plan that flows logically from the mission of the organization, the external environment, and organizational goals and objectives. Studies strategic planning, grant development, project development, execution and evaluation, marketing, financial management and law as it pertains to international NGOs. Prerequisite: MIM 511.

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 (2)

Explores the crucial roles that executives, managers, and business professionals play in selecting, sourcing, designing, and implementing information technologies, and in managing the business processes that produce value from those investments. Positions these issues in the context of the particular challenges that arise in managing information technology across international boundaries and in global firms.

MIM 571

Global Strategic Cost Management (4)

Takes the perspective that global managers should use multiple approaches to developing and using accounting information for global companies. Special emphasis placed on understanding traditional cost systems, activity-based costing systems,

cost management in global supply chains and determining the cost of quality. Relies heavily on the examination of actual global company situations. Prerequisite: MIM 574.

MIM 572

Global Business Valuation (4)

Focuses on financial analysis of the performance of the global business or parts of the global business such as product or projects. Tools and techniques of financial statement analysis from the perspective of chief financial and accounting officers, investors and creditors; development of models for determining and forecasting the profitability and financial position of the global firm. Business valuation techniques, emphasizing cash flow projections. Some issues in costs and risk management. Theoretical principles and practical approaches of valuation of a global business or business interest, including valuation strategies for specific purposes such as mergers, acquisitions, and corporate restructuring, multi-SBU and international operations. Prerequisite: MIM 574.

MIM 573

Cases in International Corporate Financial Management (4)

This final course in the MIM International Corporate Finance Specialization integrates concepts, tools and knowledge gained from the previous specialization coursework. Case analyses are used to enhance analytical and quantitative skills applied to real-world situations. All case work focuses on companies having international operations, with particular emphasis on the Asia-Pacific region. Prerequisites: MIM 574, MIM 571, and MIM 572.

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 577

International Business Negotiations (3)

Examination of the theory and techniques of negotiation, influencing, and dispute resolution for forging mutually profitable business relationships, enhancing team cohesion, and establishing sustainable international partnerships. The course makes extensive use of negotiation role plays, out-of-class exercises, and panels by experienced negotiators.

MIM 579

Asia Field Study (3)

Field study in China, South Korea and Japan. As a capstone experience, students travel to China, South Korea and Japan (possibly South Korea) 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 different Asian countries.

MIM 588, 589

Global Business Strategy I, II (2, 2)

The course will analyze business strategy as both a long-term plan and the translation of that plan into sustainable operational results. This 2 part course will examine how strategic decision-making can integrate social responsibility into a global business strategic plan. The course will focus on: the United States, the Pacific Rim, and the European Union.

Real Estate

RE 199

Special Studies (Credit to be arranged.)

Application of finance and economic principles to

RE 360

Real Estate Finance I (4)

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: EC 201. (The course is cross listed as USP 360, and may only be taken once for credit).

RE 399

Special Studies (Credit to be arranged.)

RE 401/501

Research (Credit to be arranged.)

RE 404/504

Internship (Credit to be arranged.)

RE 405/505

Reading and Conference (Credit to be arranged.)

RE 407

Seminar (Credit to be arranged.)

RE 409/509

Practicum (Credit to be arranged.)

RE 410/510

Selected Topics (Credit to be arranged.)

RE 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 the organization and financing of urban public services. Prerequisites: Ec 201, 202 and junior standing. This course is the same as Ec 431 and USP 431 and may only be taken once for credit.

RE 438/538

Real Estate Law (3)

Provides students with a comprehensive summary of real property from a legal perspective with an emphasis on transactional issues. Includes issues relating to types of ownership, descriptions of property, easements, public and private limitations on use, real estate contracts, forms utilized in transfers, financing and title assurances. The class will enable students to understand the legal framework and the rights and responsibilities of owners and transferors/transferees of real property. Prerequisites: EC 201 (undergraduates). Expected preparation for graduate students: RE 521. This is the same course as USP 438/538; may be taken only once for credit.

RE 439/539

Real Estate Valuation I (3)

Fundamentals of appraising real estate. Land utilization. Analysis of real estate values by approaches followed by governmental and private appraisers. Prerequisites for undergraduates: BA 303 or USP 233. Prerequisites for graduates: Fin 551 or Fin 561 or RE 521.

RE 459/559

Real Estate Valuation II (3)

Applies concepts from 439/539 to examine case studies in real estate appraisal and valuation. Topics include valuation for financial reporting, determining the highest and best use for a site, and determination of value following a property taking or condemnation. Prerequisites for undergraduates: RE 439 and Fin 319. Prerequisites for graduates: RE 539 and RE 521.

RE 460

Real Estate Finance II (4)

Finance principles 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 for undergraduates RE/USP 360 and Fin 319.

RE 521

Real Estate Finance I (4)

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 terminology, including title, contract, regulation, and financing issues, and case studies in real estate development. Expected preparation: Ec 201 and Ec 202.

RE 522

Real Estate Finance II (4)

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 given to risk analysis, alternative mortgage instruments, hedging techniques, and the tax effects of real estate investment. Prerequisites: RE 521.

RE 531

Executive Perspectives on Real Estate (1)

A series of presentations by local and regional leaders in the real estate industry highlighting issues in the development of their business and career opportunities in the real estate industry. Prerequisites: admission to the Master of Real Estate Development program.

RE 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. Expected preparation: RE 521 or USP 515.

RE 562

Real Estate Development Workshop (4)

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 mastery of the development concepts and tools learned through the previous courses. Prerequisites: USP 546 or instructor's consent. Course may be taken twice for credit with instructor's consent.

RE 573

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. Same course as USP 573, can be taken only once for credit. Expected preparation: USP 515 or RE 521.

Graduate School of Education

RANDY HITZ, DEAN
CHERYL L. LIVNEH, ASSOCIATE DEAN FOR OUTREACH
608 SCHOOL OF EDUCATION BUILDING, 503-725-4619
www.pdx.edu/education



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 (P-12); Postsecondary, Adult and Continuing Education; Library Media; Counselor Education (options: School, Clinical Mental Health, Rehabilitation, Marital, Couple and Family); Literacy Education; Special Education
ESL/Bilingual 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 Education)

The Graduate School of Education (GSE) 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 licenses and added endorsements.

GSE programs are fully accredited by the National Council for Accreditation of Teacher Education and by the Oregon Teacher Standards and Practices Commission. Counselor Education programs are accredited by the Council for Accreditation of Counseling and Related Educational Programs and the Council on Rehabilitation Education. 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.†

† 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 welcomes all students to join in helping us reach our mission: “preparing professionals to meet our diverse 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 model professionalism and 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.

Goals and Purposes:

We prepare our candidates to provide leadership in:

Diversity and Inclusiveness:

- to work in diverse settings
- to promote inclusive and therapeutic environments

Research-Based Practices and Professional Standards

- to critically analyze and implement research-based practices
- to demonstrate appropriate professional knowledge, skills, and dispositions

Impact on Learning and Development

- to ensure all learners and clients succeed
- to use technology to enhance learning
- to influence policy and provide leadership for organizations

Evidence Informed Decision Making

- to use evidence to solve problems of practice and make educational and therapeutic decisions

Undergraduate programs

Undergraduate students interested in pursuing a career in teaching should refer to the “Teacher Preparation” section in this catalog (page 295) for information regarding recommended preparatory programs for elementary and secondary teachers.

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.

Admission requirements

To be admitted to a graduate program in professional education, the applicant must first satisfy minimum University requirements listed on page 58. 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.pdx.edu/education.

Degree requirements

University graduate degree requirements are listed on page 65. 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) and Secondary Dual Educator Program (SDEP).

For GTEP, additional coursework includes:

	Credits
CI 563 Teacher as Researcher	4
Electives	1-3

For BTP, additional coursework includes:

	Credits
CI 563 Teacher as Researcher	4

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 conceptually sound, ethically responsible, and culturally responsive.

Option I: Educational Leadership and Policy

The Department of Educational Leadership and Policy (ELP) offers a department-wide Master of Arts and Master of Science degree with themes in: Educational Leadership; Postsecondary, Adult, and Continuing Education (PACE); and Leadership in Sustainability Education (LSE).

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; educational research and evaluation; and leadership in sustainability education. 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)
†ELP 551 Social Foundations of Education or ELP 554 Philosophy of Education	
ELP 555 Gender and Education	
ELP 556 Urban Schools and At-Risk Status	
ELP 552 History of Education	
ELP 553 History of American Education	
ELP 557 Cultural Pluralism and Urban Education Research and evaluation	4 (minimum)
†ELP 511 Principles of Educational Research and Data Analysis I	
Organizational systems.....	4 (minimum)
†ELP 568 Educational Organization and Administration	
Adult development.....	4 (minimum)
†ELP 520 Developmental Perspectives on Adult Learning	

† Required course.

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 majority of students complete the comprehensive exam which involves a professionally grounded theory-to-practice project formally contextualized in the research literature. The thesis requires an oral examination in addition to the written product and is likely to significantly extend a student’s time to completion. Courses numbered 808 are not allowed. Further information about each of these areas of specialization may be obtained from the Graduate School of Education. For more information please visit our web site at www.pdx.edu/elp/.

Option II: Curriculum and Instruction

The M.A./M.S. degree in education in curriculum and instruction emphasizes professional education. The purpose of the program is to prepare experienced teachers and others interested in education to be teacher leaders, create curricula, and respond positively to our increasingly diverse schools and society. Students can complete the electives in a variety of ways: working toward ESL, Reading, or Library/Media endorsements, focusing on one of the department specializations, or choosing from an array of graduate level classes.

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. All courses must be 500 level or above.
- 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 taken prior to admission may be included in the program.
- g. The total credits of (e.) and (f.) cannot exceed 15.

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 590 Action Research: Proposal (3)
- Coun 525 Guidance for Classroom Teachers (3)
- CI 591 Action Research Implementation (3)

Early Childhood specialization. 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. For more information, please see our Web site at www.pdx.edu/ci/early-childhood-specialization.

Option III: Counseling

All students who are pursuing a master's degree in counselor education must complete core courses with some additional work needed based on program requirements. 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 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 behavioral health 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, diagnosis 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: clinical mental health counseling, rehabilitation counseling, and school counseling; and marital, couple, and family counseling. This is primarily an evening weekend program. The program takes three years to complete unless students choose to proceed more slowly.

Students can choose (a) written comprehensive exam, (b) thesis, or (c) professional portfolio (for school counseling students only). Thesis credits are in addition to the required credits for graduation. The thesis must be no less than 6 credits and no more than 9 credits.

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 129.). Courses numbered 808 are not allowed.

Core courses	Credits
Coun 504 Internship.....	12
Coun 509 Practicum: Group Counseling.....	1
Coun 509 Practicum: Counseling	6
Coun 509 Practicum: Peer Supervision	2
Coun 531 Foundations of Substance Abuse Counseling.....	3
Coun 543 Interpersonal Relations.....	3
Coun 551 Theories and Interventions I	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
Total	56

Clinical Mental Health Counseling

Specialization. The clinical mental health counseling specialization prepares individuals to work as counselors in private and public clinical mental health 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 clinical mental health counseling specialization must include the following courses:

	Credits
Core coursework.....	56
Coun 552 Theories and Interventions II	3
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
Coun 544 Consultation: Theory and Practice.....	2
Coun 546 Grief and Loss.....	2
Coun 572 Systemic Perspectives on Human Sexuality.....	3
Coun 577 Family Therapy or	
Coun 578 Couples Therapy.....	3
Coun 593 Case Management	3
Electives	3
Total	90

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 80 credit program:

	Credits
Core coursework.....	56
Coun 552 Theories and Interventions II	3
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 594 Occupational Analysis/Vocational Evaluation.....	3
Coun 595 Contemporary Issues and Applications in Rehabilitation Counseling.....	3
Total	80

Marital, couple, and family counseling specialization.

The marital, couple, and family counseling specialization prepares individuals to work 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 teach-

ing 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 marital, couple, and family specialization requires the completion of the following credits:

	Credits
Core coursework	56
Coun 552 Theories and Interventions II	3
Coun 572 Systemic Perspectives on Human Sexuality.....	3
Coun 573 Contemporary Couples, Marriage, and Family Systems	3
§Coun 574 Family Life Cycle and Transitions	3
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.....	3
Coun 555 Counseling Children & Youth.....	3
Coun 588 Diagnosis & Treatment Planning II	3
Coun 544 Consultation: Theory and Practice.....	2
Coun 546 Grief & Loss.....	2
Total	90

§ Coun 573 and 575 recommended prior to enrolling in these courses.

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 75 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 129.)

	Credits
Core coursework	56
Coun 527 Counseling Individuals with Diverse Needs	3
Coun 545 Youth at Risk	3
Coun 547 Legal & Ethical Issues in School Counseling.....	1
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	75

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 9 credits. The remaining credits are drawn from the special education licensure program or other courses approved by

the advisor. No more than 6 credits of 800-level courses may be used, and 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).

Master's core program. Students must take SpEd 596 Topic in Special Education Research before enrolling in SpEd 597 Topic in Special Education Issues and Practices. Topics such as Literacy, English Language Learners, Positive Behavior Intervention Supports, and Students with Significant Disabilities are offered. Students must complete SpEd 596 before SpEd 597 in a topic area. With advisor approval students may take up to 9 credits of SpEd 596 and 9 credits of SpEd in three topic areas. Students must fulfill a capstone experience by choosing either to complete a special project (SpEd 506) or a master's thesis (SpEd 503) under the direction of a faculty advisor. The special project (SpEd 506) must include a written product and presentation. Students opting to complete a thesis will follow Portland State University theses guidelines outlined on page 67. Students are required to enroll in 3-6 credits of Special Project (SpEd 506) or 6-9 credits of Thesis (SpEd 503).

The master's degree program includes:

Advisor approved courses (from licensure program or electives)	30-36
SpEd 596 Topics in Special Education Research.....	3
SpEd 597 Topics in special Education Issues and Practices.....	3
A combinationn of the following:	
SpEd 503 Thesis	6-9
or	
SpEd 506 Special Project.....	3-6
Total for Master's in Special Education	45

Students completing the Master's program with a focus on Visually Impaired Learners have the option of completing the Master's core program as described above or to complete SpEd 596, SpEd 597, an additional 6 elective hours in special education AND complete a proctored, written master's comprehensive examination.

For students with a focus on Visually Impaired Learners completing the master's degree program includes:

Advisor approved courses (from licensure program or electives)	30-36
OPTION 1:	
SpEd 596 Topics in Special Education Research.....	3
SpEd 597 Topics in special Education Issues and Practices.....	3
A combinationn of the following:	
SpEd 503 Thesis	6-9
or	
SpEd 506 Special Project.....	3-6
OPTION 2:	
Electives with advisor approval	6
Complete proctored master's comprehensive examination.	
Total for Master's in Special Education	45

Students completing the Master's program as part of the Inclusive Elementary Educator Program must satisfy the special education Master's core program requirements by completing the required courses as follows:

ED 530 Introduction to Inclusion and Special Education.....	2
ED 536 Educational Research and Inclusive Education.....	3
SpEd 506 Special Project or	
SpEd 503 Thesis.....	6

Option V: Media/Library

The PSU program in library media focuses on the preparation of the school library media specialist for professional positions in K-12 school libraries. The program incorporates all of the coursework that is part of the school library endorsement plus a 16-credit core of studies representing research and evaluation, human relations, and other current topics that apply to the school library 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 library media 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	
Lib 548 Organization of Library Media Collections4	
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 Experience.....	3
Lib 576 Planning and Evaluation of Library Media Programs.....	3
Electives	4

In consultation with the adviser, students must complete the course requirements to complete the requirements for the master's degree, and take a 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.pdx.edu/education/library-media-masters-degree.

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 prepare scholarly practitioners and 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 specializations are available to students: administration (PreK-12); curriculum and instruction; postsecondary education; special and counselor education. Each student is admitted to one of the three specializations.

General requirements. The program is a post-master's degree program. Students must have earned a master's degree or the equivalent prior to enrollment in the program. 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 800 or above 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	26-36

Students will complete a minimum of 26 hours of coursework in the following specializations:

- Administration (PreK-12)
- Curriculum and Instruction
- Postsecondary Education
- Special and Counselor Education

Courses selected in the specialization must be approved by the student's advisor.

Comprehensive examinations. The comprehensive examination covers the leadership core and is taken when the student has completed the first year of the leadership core (ED 620, ED630, ED 640, and ED650).

The core examination is designed to assess a student's ability to analyze, synthesize, and apply frameworks from the leadership core to an educational topic of significance. Students write an academic paper for the examination. The paper is evaluated by a faculty committee. Specializations may require that the student present and defend the paper to a faculty committee in a public meeting.

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. 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 coursework, the study of practice (i.e., field-based work), credits by arrangement, and/or dissertation credits. Foreign language competency is not required for the Ed.D. degree.

Graduate Certificates

Addictions Counseling

A series of six courses at the non-credit or graduate levels (18 credits) providing a broad overview of addictions counseling, concepts of treatment, and clinical skills. The program is intended for human services treatment professionals in the community and graduate students in related fields, to enable them to acquire training and education in science-based practices and to provide the knowledge essential to working with addicted populations.

Children's and Young Adult Literature

Students in this 16 credit program explore contemporary and multicultural literature, authors, illustrators and genres with a focus on selecting and evaluating quality literature for children and young adults. Students also gain skills for integrating literature into the K-12 school curricula and programs. This program is designed for educators looking for professional development opportunities as well as staff in public libraries, especially those working in children and young adult services.

Infant Toddler Mental Health

A 25-credit graduate certificate for professionals who provide services to families with children from the prenatal period to 36 months of age. Students begin as a cohort and participate together through six quarters of online instruction and one weekend face-to-face meeting per term on PSU's campus.

A practicum is required. May be combined with a master's degree.

Service-Learning and Community Based Learning in Postsecondary Education

Provides sound philosophical, theoretical, and experiential preparation in service-learning and community engagement for those who teach, coordinate, and/or research learning through community involvement with college students (18 credits).

Student Affairs in Higher Education

Provides professional development for individuals in student affairs and student services positions in two and four-year colleges (18 credits).

Teaching Adult Learners

Focuses on the teaching and motivation of diverse adult learners and the most effective strategies to ensure learning and professional development (18 credits).

Licensure

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 (TPSC) for licensure. One component of this system requires the educator to pass a basic skills test, subject matter tests, and a civil rights knowledge test. For information on Oregon testing requirements please refer to the Teacher Standards and Practices Commission website: <http://www.oregon.gov/tspc/Pages/Testing.aspx>.

Because passing 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 licensure recommendation

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), 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 Teacher Education program 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 insti-

- tution
- 2. Admission to PSU
- 3. Cumulative 3.00 GPA
- 4. Psy 311 Human Development (or equivalent)
- 5. Basic Skills and Content area tests – see program website for current testing information www.pdx.edu/ci/gtep-prerequisites-and-tests
- 6. Departmental recommendation—Middle Level and High School
- 7. Other prerequisites (Early Childhood/Elementary only): Art 312, Mus 381, Lib 428, and Mth 211, 212, 213
- 8. Ed 420/520 Introduction to Education and Society (or the equivalent) are strongly recommended.

Specific program admission requirements and application details are available at <http://www.pdx.edu/ci/gtep-info>.

Program requirements:

Early childhood and elementary	Credits
CI 509 Practicum: Initial Field Experience.....	3
CI 510 Literacy in ECE and/or Elementary.....	2-4
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	3
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	6
CI 551 or CI 553 Student Teaching II	15
SpEd 418/518 Survey of Exceptional Learners.....	3
Total	58

Program requirements:

Mid-level and high school	Credits
CI 509 Practicum: Initial Field Experience.....	3
CI 510 Engaging High School Learners.....	3
and/or	
CI 510 Engaging Middle School Learners.....	3
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.....	6
CI 555 Student Teaching II.....	15
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. Not all endorsement areas are offered every year; check the GTEP website for current information.

Advising in subject matter endorsement areas is through the appropriate academic department. Teacher candidates 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. 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 Graduate Teacher Education Program website.

Dual elementary education/special educator licensure with master’s degree.

The Graduate School of Education offers a dual licensure program in early childhood and elementary general and special education that also includes a master’s degree. This full-time program of integrated coursework and field experiences is completed over six terms. Students are licensed to teach early childhood and elementary (pre-K to grade 8) and special education (also pre-K to grade 8). Faculty from both curriculum and instruction and special education are instructors in this program. This program reflects the rapidly changing nature of America’s schools, where a wide range of diverse learners can be found in most classrooms.

	Credits
Ed 533 Literacy Methods for the Inclusive Classroom: I	3
CI 511 Classroom Management	3
Ed 530 Introduction to Inclusion and Special Education	2
CI 513 Classroom Instruction and Technology	3
Ed 532 Human Development and Learning	3
Ed 509 Practicum: Elementary or Early Childhood	2
Ed 534 Literacy Methods for the Inclusive Classroom: II	3
SpEd 521 Behavior Management in the Classroom	3
CI 518 Integrated Methods III: Math	3
Ed 535 Classroom Based Assessment for the Inclusive Educator	2
Ed 531 Planning and Instruction for Students with Special Needs	3
Ed 509 Practicum: Special Education	2
CI 514 Multicultural and Urban Education	3
CI 517 Integrated Methods I: Health, Science, Social Science	3
CI 518 Integrated Methods II: Art, Music, Physical Education	3
Ed 525 Student Teaching I: Elementary or Early Childhood	6
Ed 536 Educational Research and Inclusive Education	3
Ed 537 Professional Seminar I: Law and Ethics	1
Ed 525 Student Teaching II: Elementary or Early Childhood	12
SpEd 512 Diagnostic Assessment	3
Ed 538 Professional Seminar II: Philosophy	1
SpEd 525 Student Teaching III: Special Education	12
Ed 540 Functional Assessment for the Inclusive Elementary Educator	3
Ed 541 Functional Curriculum for the Inclusive Elementary Educator	3

Ed 542 Collaboration for the Inclusive Elementary Educator	2
Ed 543 Specialized Techniques for the Inclusive Elementary Educator	1
Ed 539 Professional Seminar III: Reflection and Job Search	1
SpEd 506 Master’s Research Project	6
Total	95

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 six terms plus one summer session. 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.

	Credits
Ed 507 Seminar I: Work sample	2
Ed 507 Seminar II: Work sample	1
Ed 507 Seminar III: Job Readiness.....	1
Ed 509 Initial Field Experience	1
Ed 580 Adolescent Learners in Inclusive Settings ..	2
Ed 581 Inclusive Classroom Researcher.....	2
Ed 582 Collaborative Teaming & SPED Process.....	4
Ed 583 Study Skills & Learning Strategies	2
Ed 584 Advocacy & Transition Planning	2
Ed 585 Instructional Planning for Inclusive Classrooms	4
Ed 586 Collaborative Teaching.....	2
Ed 587 Inclusive Ed Research and Leadership.....	2
CI 511 Classroom Management	2
CI 514 Multicultural & Urban Education	3
CI 519 Special Secondary Methods	3
CI 525 Student Teaching Inclusive Setting.....	6
CI 525 Student Teaching Fulltime Inclusive.....	12
CI 543 Effective Teaching Strategies & Materials for Working with Linguistically & Culturally Diverse Learners.....	3
CI 548 Advanced Secondary Methods: Specialty Area.....	3
SpEd 509 PRAC: Supervised Field Experience.....	3
SpEd 510 Functional Assessment and Curriculum.....	3
SpEd 510 Functional Assessment and Curriculum.....	3
SpEd 512 Diagnostic Assessment	3
SpEd 513 Classroom-based Assessment	3
SpEd 521 Behavior Management.....	3
SpEd 525 Student Teaching SPED half time.....	6
SpEd 528 Instructional Methods I: Literacy (mid-lvl/H.S.).....	3
SpEd 529 Instructional Methods II: Math & Content Area Instruction.....	3
SpEd 536 Specialized Techniques.....	3
SpEd 571 Adolescents with Learning Differences.....	2
Total required	92

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 at both the elementary and secondary levels. In addition, the ESOL/Bilingual Endorsement is included as part of the program. The BTP core consists of 43-44 credits and the ESOL endorsement is 22 credit hours. 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 www.pdx.edu/ci/btp.

For Early Childhood or Elementary	Credits
CI 412/512 Teaching and Learning	3
CI 437/537 Professional Development and Reflection	2
CI 438/538 Language and Literacy Dev of Diverse Learners	3
CI 435/535 Planning, Assessment, and Curriculum	3
CI 411/511 Classroom Management	3
CI 417/517 Integrated Methods II: Health, Science, SS	5
CI 418/518 Integrated Methods III: Math, Art, Music, PE	5
CI 413/513 Instruction and Technology	3
CI 415/515 Reflective Practitioner II A	2
CI 415/515 Reflective Practitioner II B	2
ELP 465/565 School Community Relations.....	3
LING 423/523 Taking Stock: Assess. & Evaluation.....	2
SPED 455/555 Working with LEP with Special Needs.....	2
LING 422/522 How Do People Learn a Second Lang	3
CI 443/543 Effective Strategies for Lang Minority Students	3
ELP 466/566 Impact of Language and Culture.....	3
ELP 467/567 ESL/Bilingual Program Designs and Models.....	3
CI 450/550 or	
CI 452/552 Student Teaching I Early Childhood or	

Student Teaching I Elementary	4
CI 451/551 or	
CI 453/553 Student Teaching II Early Childhood or Student Teaching II Elementary	9
CI 509 Practicum in ESL/Bil Ed	3
For Mid-Level and High School	Credits
CI 412/512 Teaching and Learning	3
CI 437/537 Professional Development and Reflection.....	2
CI 438/538 Language and Literacy Dev of Diverse Learners	3
CI 435/535 Planning, Assessment, and Curriculum	3
CI 411/511 Classroom Management	3
CI 419/519 Special Secondary Methods	3
CI 448/548 Advanced Secondary Methods	3
CI 410/510 Engaging the ML Learner or Engaging the HS Learner	3
CI 413/513 Instruction and Technology	3
CI 415/515 Reflective Practitioner II A	2
CI 415/515 Reflective Practitioner II B	2
ELP 465/565 School Community Relations.....	3
LING 423/523 Taking Stock: Assess. & Evaluation ..	2
SPED 455/555 Working with LEP with Special Needs.....	2
LING 422/522 How Do People Learn a Second Lang	3
CI 443/543 Effective Strategies for Lang Minority Students.....	3
ELP 466/566 Impact of Language and Culture.....	3
ELP 467/567 ESL/Bilingual Program Designs and Models	3
CI 456/556 or	
CI 454/554 Student Teaching I Mid-Level or Student Teaching I High School.....	4
CI 457/557 or	
CI 455/555 Student Teaching II Mid-Level or Student Teaching II High School	9
CI 409/509 Practicum in ESL/Bi Ed	3

Initial K-12 Teaching License in Library Media

Students have the option of selecting a program leading to a K-12 Initial Teaching License in library media. The program includes library media and education coursework, and student teaching experience in a library media center. This enables the student to be a K-12 library media specialist, but not a classroom teacher.

Admission Requirements

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)

Program Requirements	Credits
CI 511 Classroom Management: Elementary	3
CI 512 Teaching and Learning: Elementary.....	3
CI 513 Instruction and Technology: Secondary	5
CI 514 Multicultural and Urban Education: Elementary.....	3
CI 516 Integrated Methods I: Reading and Language Arts/Elementary	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 554 Student Teaching I: Elementary or Secondary	6
Lib 555 Student Teaching II: Elementary or Secondary	15
Choose One:	
CI 521 Reading and Comprehension in Content Areas	3
OR	
Read 530 Reading and Composition in Content Areas 4-12	3
Total	64

Students must score above Oregon's cut-off point on the Library Media Praxis Test for PSU to recommend them to TSPC.

For additional information about the program and course work, see www.pdx.edu/ceed/library-media-K-12-initial-license.

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
ELP 465/565 ELL School/Community Relations.....	3
ELP 466/566 Impact of Language and Culture in the Classroom	3
ELP 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 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 program, 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.pdx.edu/ceed/readoregon.

Library Media Endorsement

The Graduate School of Education offers a graduate-level program leading to a recommendation for a library media endorsement. The Library Media Endorsement Program consists of a comprehensive set of coursework (29 credits) that prepares students to be competent PreK-12 school librarians. Recommendation for the endorsement, to be added to a current teaching license, is made to Teacher Standards and Practices Commission (TSPC) when a candidate successfully completes this program (the following courses and two 90-hour practica) and receives passing scores on the Library Media NES/Pearson Exam.

	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.pdx.edu/ceed/library-media-endorsement.

Educational Administration

Two authorized programs comprise the Executive Leadership Program leading to institutional recommendations for initial and

continuing administrator licensure of qualified persons for positions as building and district level administrators. 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 Leadership and Policy (ELP) and on our Web page at <http://www.pdx.edu/elp/education-administration-licensure-specialization>.

The Initial Administrator License (IAL) Program, prepares individuals for positions as building-level administrators. 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 an accredited institution. The initial administrator curriculum includes:

	Credits
Prerequisites:	
ELP 569 Introduction to Educational Administration	4
ELP 511 Principles of Educational Research and Data Analysis I	4
Core:	
ELP 570 Human Relations and Educational Foundations	4
ELP 571 Teaching, Learning, and Curriculum	4
ELP 572 Human Resource Development and Organizational Change	4
ELP 509 Practicum	9
ELP 573, 574, 575 Educational Leadership Project I, II, III	3
Total	24

The Continuing Administrator

Licensure Program (CAL), prepares individuals for positions as continuing school administrators and as school district administrators. This program requires prior completion of the initial administrator program or its equivalent. Each course includes a 30-hour field-based project.

	Credits
ELP 576 Education, Community and Society	4
ELP 577 District and School Staff Supervision and Evaluation	4
ELP 578 Communication and Conflict Management in Educational Organizations	4
ELP 579 Curriculum, Instruction and Assessment Leadership	4
ELP 580 District Policy, Operations, Facilities and Finance	4
ELP 581 U.S. and Oregon School Law and Policy	4
ELP 506 Special Topics: Administration	4

Students who completed an earlier licensure program prior to 2005 should consult with the Department of Educational Leadership and Policy (ELP) to determine what new license requirements must be met.

Literacy Education/Reading Endorsement

The literacy education faculty have designed a program that works to develop classroom

teachers, reading specialists, literacy coaches, and district reading personnel whose practice grows out of a solid grounding in literacy theory and research. 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.
- Leadership in literacy program/curriculum development and implementation.

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 and 810 are not allowed.

Core (16 credits)	Credits
CI 522 Literacy Foundations	4
CI 528 Literacy Assessment for Reading Specialists	3
CI 529 School Reading Program Leadership	3
CI 536 Language, Literacy, and Culture	3

In addition, one of the following is required for the core (chosen according to authorization level):

CI 574 Assessing and Teaching Struggling Elementary Readers	3
CI 530 Teaching Struggling Adolescent Readers	3

Practicum (3 credits)	
CI 509 Practicum: Literacy/Reading Endorsement ..	3

Electives (6 credits appropriate to authorization level chosen in consultation with advisor)	
CI 572 Language and Literacy in Early Childhood Education	3
CI 547 Advanced Elementary Methods: Reading	3
CI 533 Media and Literacy	3
CI 520 Linguistics for Teachers	3
CI 524 Developing a Writing Workshop	3
CI 527 Literature in Classrooms K-8	3
CI 531 Facilitating Content Area Literacy Strategies	3
Lib 529 Young Adult Literature	3

Total credits required..... 25
Note: No 400 or 800 level courses are accepted.

School Counseling Licensing

The school counseling specialization has three options: track I, track II, and licensure only.

Track I. The program consists of 75 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 81 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 Counselor content knowledge exam (NES/ORELA School Counselor #510 test) with score of 224+ to be eligible for licensure.
- Be fingerprinted and pass ORELA Protecting Student and Civil Rights in the Educational Environment test.
- After graduation and licensure, verify three years of one-half time or more 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 Secondary Dual Endorsement Program is offered in mid-level high-school education and special education. Students who complete these programs receive two endorsements. Information about these programs is available from the Graduate School of Education.

Special education common background required. In addition to a bachelor's degree, the following courses are prerequisites for admission to the special education licensure

programs. Experience in education such as: early childhood special education, elementary, mid-level, or secondary teacher, instructional assistant, substitute teacher, or community experience is 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	4
Mth 211, 212, Foundations of Elementary Mathematics	8
SpEd 418/518 Survey of Exceptional Learners.....	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 programs leading to state licensure and endorsements in the following areas:

- Special Educator (Initial): for either elementary or secondary authorizations
- Added Special Educator (AddSPED): for licensed teachers adding a Special Educator endorsement
- Visually Impaired Learner
- Early Intervention/Early Childhood Special Education

Special Educator Initial Endorsement Program

The Special Educator endorsement program prepares teachers to work with children and youth with a range of disabilities in either elementary or secondary settings.

SpEd 510 Foundations of Special Education	3
SpEd 510 Legal & Ethical Foundations	3
SpEd 510 Classroom Assessment, Instruction, & Behavior Management*	4
SpEd 510 Math Assessment & Instruction	3
SpEd 509 Professional Introduction to the Start of the School Year	2
SpEd 510 Reading Assessment & Instruction*	3
SpEd 521 Behavior Management.....	3
SpEd 509 Practicum: Academic Skills Focus.....	3
SpEd 510 Curriculum & Assessment for Students with DD/ASD—I	4
SpEd 510 Curriculum & Instruction for Students with DD/ASD—II	4
SpEd 509 Practicum—Functional Life Skills Focus.....	3
SpEd 510 Families & Advocacy*	3
SpEd 510 IEP & Collaborative Teaming.....	3
SpEd 510 Assessment	3
SpEd 510 Reading & Writing across the Continuum.....	4
SpEd 525 Student Teaching	15

* Separate sections for those seeking either early childhood/elementary or middle level/high school authorizations.

Added Special Educator Endorsement (AddSPED)

The program of study for teachers adding a Special Educator endorsement to their teaching license is similar to those seeking an initial license. It does not require a full-time student teaching experience (SpEd 525).

SpEd 510 Legal & Ethical Foundations	3
SpEd 510 Math Assessment & Instruction	3
SpEd 510 Reading Assessment & Instruction*	3
SpEd 521 Behavior Management.....	3
SpEd 509 Literacy Work Sample Practicum & Seminar	2
SpEd 510 Curriculum & Assessment for Students with DD/ASD—I	4
SpEd 510 Curriculum & Instruction for Students with DD/ASD—II	4
SpEd 509 Functional Practicum & Seminar.....	2
SpEd 510 Families & Advocacy*	3
SpEd 510 IEP & Collaborative Teaming.....	3
SpEd 510 Assessment	3
SpEd 510 Reading & Writing across the Continuum.....	4
SPED 510 Classroom Assessment, Instruction, and Behavior Management*	4

* Separate sections for those seeking either early childhood/elementary or middle level/high school authorizations.

Vision Impaired Learner Initial Endorsement Program

SpEd 509 STE I Visually Impaired	3
SpEd 509 STE II Visually Impaired	3
SpEd 510 Legal and Ethical Foundations	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 56

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.

Credits

Ed 510 Inclusive Early Childhood Models.....	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.....	15
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 58

Continuing Education Graduate School of Education (CE/ED)

503-725-4670

CEED provides credit and noncredit professional development for PreK-12 educators, administrators, and support staff; post secondary 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).

CENTERS

The Autism Training and Research Center

The Autism Training and Research Center provides training and consulting on evidence-based practices to educators and parents of individuals with autism spectrum disorders, and conducts research in areas that are important to educators and families of individuals with autism spectrum disorders.

The Center for Student Success—503-725-9519

centerforsuccess@pdx.edu
www.pdx.edu/ceed/success

The Center for Student Success provides technical and consulting services to local and regional schools, school districts, education service districts, and nonprofit organizations working to increase student success

and to bridge the achievement gap. The Center's experienced staff and consultants provide a range of services including program and grant evaluations, charter school evaluations, and professional development design and implementation.

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

ECTC provides 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 Northwest Early Childhood Center for Education, Research, and Policy

The Northwest Early Childhood Center for Education, Research, and Policy (NWECC) is a collaboration of early childhood programs and centers which focus on education, research, and policy to improve the lives of all young children (birth to age 8) and their families within the PSU, local, regional and national communities. The NWECC is committed to communities in which all young children and their families thrive.

The Research Center on Inclusive and Effective Educational Practices (RCIEP)

The Research Center on Inclusive and Effective Educational Practices (RCIEP) serves as a catalyst and provides support to special education faculty in the development and implementation of externally funded research that significantly impacts the quality and effectiveness of intervention and instruction provided to children and youth with a variety of educational challenges, to their families and to the schools and agencies that serve them.

Courses

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 430/530**Introduction to Psychiatric Diagnoses (3)**

Covers the causation, criteria, diagnosis and classification of the major psychiatric disorders.

Emphasis is placed on both the traditional medical model and on the psychosocial model of diagnosis. Developmental aspects associated with normal and abnormal personalities will also be discussed. Prerequisite for the Counselor Education graduate programs and will not be credited toward the completion of the degrees. Recommended prerequisite: Psy 311.

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)**

This course provides an introduction to the counseling profession. Specifically, it focuses on introducing theories and skills related to working with individuals, groups, and families across a variety of settings. It also provides an introduction to various career and educational options within the counseling profession. The course is cross listed as an undergraduate and graduate course, with different requirements for each.

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. Primary focus is on evidence-based practices.

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)**

Merges theoretical components of addiction treatment with practical application. Students enhance

their academic learning by providing counseling services (i.e., individual counseling, group counseling and/or observational learning activities with actual clients) in a clinical training setting. Addresses practice domains including individual and group counseling skills, counseling a diverse population, and working with dual diagnosis.

Coun 543**Interpersonal Relations II (3)**

Focuses on the development of foundational active listening, counseling skills. The course is taken concurrently with COUN 509 Practicum Counseling.

Coun 544**Consultation: Theory and Practice (2)**

Focus on the theory and practice of consultation and collaboration with various populations (e.g., parents, families, clinical practitioners) and across a variety of settings, particularly mental health agencies and schools. Prerequisites: graduate standing.

Coun 546**Grief and Loss (2)**

Focus on developing knowledge and skills related to counseling individuals and families having experienced loss through death. Students will receive information about theories of grief, explore the neurobiology of the brain in relation to trauma, recognize factors that complicate grief and develop counseling strategies for working with these issues. Prerequisites: graduate standing.

Coun 547**Legal and Ethical Issues in School
Counseling (1)**

Focuses on the legal and ethical considerations specifically related to the practice of school counseling. Class time will include lecture/discussions, experiential exercises, and completion of case vignettes related to common legal and ethical issues. Prerequisites: graduate standing.

Coun 551**Theories and Interventions I (3)**

This course focuses on providing an overview of counseling theories and their practical applications with various populations. The emphasis will be on learning the key concepts of each major theory across three dimensions: (a) human nature, (b) pathology, and (c) treatment. Focus will also be on conceptually applying each theory to client cases and on understanding underlying values and common elements across theories. Graduate standing is a prerequisite for this class.

Coun 552**Theories and Interventions II (3)**

This course focuses on providing an overview of advanced and contemporary counseling theories and their practical applications with various populations. The emphasis will be on learning the key concepts of each major theory across three dimensions: (a) human nature, (b) pathology, and (c) treatment. Focus will also be on conceptually applying each theory to client cases. Completion of COUN 551 is a prerequisite for this class.

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 is designed to provide students with opportunities to learn about group counseling theories and skills. Particular emphasis will be placed on understanding group dynamics and leadership skills as they may apply to different populations and settings. Class time will include lecture/discussion and group-based experiential learning.

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 (3)**

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 (3)**

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)**

This course will provide an overview of family therapy, particularly related to parent-child relationships. Families will be understood from practical, structural, intergenerational, cultural, developmental, topical, and process perspectives. A foundation in family therapy theory is a prerequisite for this course; the emphasis here will be on

application of theory and the development of family therapy skills. Experiential learning (role plays) will occur during class, with participation required from all students.

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 (3)**

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, program 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)

Foundational 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 597

Strengths, Risk Factors, and Disturbance in Infants, Toddlers, and Their Families (3)

Focus on infants, toddlers, and their families and how they cope successfully with life tasks and external stressors. Examination of what happens when coping breaks down and problems emerge in families with young children. Students will (1) identify relevant strengths and resiliency factors for infants, toddlers, and their families; (2) understand developmentally relevant risk factors, especially parental mental health issues, and their potential impact on infants, toddlers, and their families; and (3) gain knowledge of major forms of psychopathology within infant/toddler mental health.

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.)

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.

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 411/511

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 412/512

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 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.

CI 413/513

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 415/515

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 417/517

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 418/518

Integrated Methods III (1-3)

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 419/519

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 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 435/535

Planning, Assessment, and Curriculum (3)

This course explores the theoretical frameworks and practical strategies that assist new teachers in planning effective classroom curriculum, assessments and instruction across academic subject areas, while focusing on the developmental and learning needs of students. Students will learn and practice a variety of techniques for unit and lesson planning, thoughtful instructional strategies and best practices in specific content areas, and how

to develop formative classroom assessments that are standards-based and are aligned with instruction and curriculum design. Prerequisites: admission to the Bilingual Teacher Pathway Program.

CI 437/537

Professional Development and Reflection (2)

Course designed to assist students in the beginning development of their profession as teachers, become familiar with national, state, and district teaching standards for teachers and K-12 students and become knowledgeable on educational law. Students will develop an initial teaching philosophy paper that will reflect their personal expression of values and goals as they relate to their practice. This paper will be refined throughout the program. Additionally, students will begin observation and data gathering in their district's learning community. Prerequisites: admission to the Bilingual Teacher Pathway Program.

CI 438/538

Language and Literacy Development of Diverse Learners (3)

Course designed for preservice teachers to help them guide elementary, mid-level, and secondary students in acquiring skills needed for reading, thinking, writing, and study in the 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. Prerequisites: admission to the Bilingual Teacher Pathway Program.

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 developmentally 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 448/548

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 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.

† Restricted to students in the Child and Family Studies degree program.

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.

† Restricted to students in the Child and Family Studies degree program.

CI 476/576

Equity and Cultural Diversity in Early Childhood Education (3)

Explore developmental early childhood education practices, emphasizing developmentally and culturally appropriate objectives as well as anti-bias learning goals. Develop awareness of quality teaching practices by exploring personal cultural history, gaining insights into living examples of difference, witnessing the effects of bias, and learning to support fairness and issues of equity in a classroom.

CI 477/577

Learning Designs: Early Childhood Environments (3)

Study of quality learning environments and design, emphasizing the roles of children's learning, adult engagement, and the environment as the third teacher. Investigate space planning, program layout, design theories, and aesthetic values. Prerequisites: Junior level standing, prior coursework in child development, or consent of instructor.

CI 478/578

Constructivist Curriculum: Big Ideas in Early Childhood Education (3)

Examines the possibilities of exploring big ideas deeply over time and across the curriculum with preschool and primary age children. Focuses on the ways that integrated curriculum and project work support children's learning and foster the connections necessary for them to construct knowledge. Students have the opportunity to develop resources and design classroom experiences related to big ideas. Prerequisites: Junior level standing, prior coursework in child development, or consent of instructor.

CI 479/579

Young Child as Scientist (3)

Explores developmentally appropriate science for preschool and primary age children, focusing on experimentation and problem-solving. Students experience and design activities for young children around three questions that derive from traditional science content: can I make it move, can I make it change, and how does it fit? In the process, students will learn more about constructivist teaching and curriculum, particularly as applied to science education. Prerequisites: Junior level standing, prior coursework in child development, or consent of instructor.

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 509

Practicum: Reading Endorsement (3)

Practicum requires reading endorsement candidates to work directly with students. Candidates will enact the various responsibilities of a reading specialist/literacy coach, to include: assessing and instructing a struggling reader, developing curriculum for various groups of readers, assessing and making recommendations for individual teachers or for a school's reading program, developing literacy-focused professional development sessions for instructional assistants, and communicating with parents and community members.

Prerequisites: Oregon teaching license, admittance to program and 15 credit hours.

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 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.

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 psychological and philosophical understandings important for the teacher teaching reading to these able students. Prerequisite: Lib 428/528.

CI 527

Literature in Classrooms K-8 (3)

Focuses on the exploration of literature for students in grades K-8, and the application of literature in the classroom. Emphasis is on selection and evaluation of books, children's reading interests, classroom applications and school leadership in promoting literature in classroom and school settings.

CI 528

Literacy Assessment for Reading Specialists (3)

This course focuses on the purposes for literacy assessment, types of assessments, the impact of culture and language on assessment, and the fundamental link between literacy assessment and instruction. Topics include the purposes of literacy assessment tools, the selection of assessments that inform instruction and assessments that inform various stakeholders, the development of a school wide assessment program, and an analysis of current assessment practices. The course is designed to develop a more extensive understanding of assessment as it relates to evidence-based literacy instruction, diversity issues, and students' literacy development.

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 530**Teaching Struggling Adolescent Readers (3)**

Designed to help teachers to develop an understanding of adolescent readers within school settings, to expand their teaching repertoire, to assist struggling readers, and to organize plans that improve secondary literacy programs. Appropriate for classroom teachers, reading specialists, and administrators interested in adolescent literacy.

CI 531**Facilitating Content Area Literacy Strategies (3)**

Course designed to help literacy leaders to facilitate content area literacy strategies in elementary, middle, and high schools and to guide students in acquiring skills needed for adequate reading, thinking, writing, and study in the disciplines. Emphasis will be on collaborating with teachers in a leadership role to facilitate strategies in all school subjects.

CI 533**Media and Literacy (3)**

An in-depth look at the ways that the Literacy Curriculum can integrate a study of media texts (movies, television programs, advertisements, Web pages, etc.). Explores both the reading and writing (production) of media texts with elementary and secondary students.

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 Elementary Literacy Methods (3)**

For students pursuing their reading endorsement or for other students interested in elementary literacy teaching. Methods for teaching elementary literacy, including reading comprehension, vocabulary, writing, word study, with attention to particular populations such as Culturally and Linguistically Diverse (CLD) students and primary grade students.

CI 550**Student Teaching I, Early Childhood (4-6)**

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 (9-15)**

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 (4-6)**

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 (9-15)**

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 (4-6)**

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 (9-15)**

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**Student Teaching I, Middle Level (4-6)**

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. Prerequisites: admission to the teacher education program.

CI 557**Student Teaching II, Middle Level (9-15)**

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 561**Advanced Educational Psychology (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 and Technology in Early Childhood Education (3)**

Study of and experience with a range of developmentally appropriate assessment and technology 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 574**Assessing and Teaching Struggling Elementary Readers (4)**

Focuses on working with elementary students experiencing difficulties in learning to read. It deals with theoretically-based understanding and analysis of students' reading; developing students reading knowledge and strategies; social and psychological aspects of literacy problems. The course includes a field experience in the form of a case study of a struggling reader. Students are responsible for arranging to work with a struggling reader in a school or other setting once or twice a week throughout the quarter.

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 590**Action Research Proposal (3)**

Designed to help educators see themselves as researchers so that they can conduct research in educational settings that contribute to the improvement of education. Knowledge of accessing and using research literature, the range of educational research paradigms and using appropriate research methods included. Students will develop a proposal for an action research project related to improving educational outcomes for all learners.

CI 591**Action Research Implementation (3)**

Implementation of action research project designed in CI 590. Discuss issues related to implementation of action research project designed in CI 590. Learn skills to analyze data collected during implementation of action research proposal from surveys, interviews, focus groups, observation, journaling writing and concept maps. Develop critical thinking abilities to analyze, synthesize and evaluate research results. Present final project in written paper. Prerequisite: CI 590 Action Research project.

CI 592**Dynamic Models of Infant/Toddler Development (3)**

Provides information on typical infant and toddler mental health development and strategies for working with young children and their families within a culturally sensitive context. Includes prenatal and postnatal development, brain development as well as theories of development including attachment, resiliency, and self-regulation are presented from a cross-disciplinary perspective. Content reflects recommended practices across disciplines when working with young children and their families.

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.)**

Education

Courses with an asterisk () are not offered every year.*

Ed 150**Teaching as a Career (2)**

Exploration of the challenges and privileges of teaching children and young adults in American public schools. Examines the purpose of schools and schooling, learning as a developmental process, and teaching as a skilled profession.

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 530****Introduction to Inclusion and Special Education (2)**

Provides an introduction to special education and the philosophy and practices associated with inclusive education. Provides historical, social and legal foundations for inclusive education. Provides students with an opportunity to develop and defend a position regarding the inclusion of students with special needs in general education. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 531**Planning and Instruction for Students with Special Needs (3)**

This course examines instructional methods, knowledge, and skills needed by elementary classroom and special education teachers for the instruction of students with special learning needs. Other content includes relevant federal and state policies and procedures, individual education plans, and differentiated lesson plans. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 532**Human Development and Learning (3)**

Students will develop an understanding of psychological concepts, theories, and principles and apply them to learning and instruction. Four areas of psychological research that have significant implications for learning will be emphasized: cognitive and metacognitive factors, motivational and affective factors, developmental and social factors, and individual differences. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 533**Literacy Methods for the Inclusive Classroom: I (3)**

Provides a foundation in research-based instruction for teaching literacy to early childhood/elementary students in inclusive educational settings. Provides an overview of language and literacy development for typical and atypical learners. Presents effective instructional practices for teaching and assessing emerging reading, beginning reading, primary and intermediate decoding skills, vocabulary, comprehension, and writing. Practice opportunities will be provided at the teacher candidates' field experience sites. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 534**Literacy Methods for the Inclusive Classroom: II (3)**

This course will examine instructional methods that are effective for teaching all students to read, write, and spell. Emphasis will be placed on key

processes that have been demonstrated through research to be essential for developing competency in reading, writing, and spelling for students with special learning needs. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 535
Classroom Based Assessment for the Inclusive Educator (2)

This course provides a theoretical framework for using assessment to guide instructional decisions. Teacher candidates will learn about formative assessment and data-based decision-making. The primary focus of the course is for teacher candidates to learn to understand critical features of assessment in education and use assessment to guide instructional decisions. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 536
Educational Research and Inclusive Education (3)

The goals of this course are to enable students to become intelligent consumers of educational research, assist students in the conceptualization and design of a research project, aid students in developing an understanding of the scientific process, and aid students in developing an understanding of research- and evidence-based educational practice. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 537
Professional Seminar I: Law and Ethics (1)

This course has two major focuses: educational law and policy at the federal and state level, and ethics of the teaching profession. The course is also a forum for reflection and discussion of field experience. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 538
Professional Seminar II: Philosophy (1)

This course provides a forum for discussion and reflection of the field experience, leads to the creation of a teaching philosophy statement and provides guidance for the completion of the work sample. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 539
Professional Seminar III: Reflection and Job Search (1)

This course serves multiple purposes. It serves as a vehicle for discussion and reflection of field experiences. Seminars will focus on preparing materials for the job search. Some seminar time will be used for student advising re licensure and graduation. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 540
Functional Assessment for the Inclusive Elementary Educator(3)

Develops philosophical and social foundations for services to individuals with significant and multiple disabilities, early childhood through elementary. 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. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 541
Functional Curriculum for the Inclusive Elementary Educator (3)

Course 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 elementary. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 542
Collaboration for the Inclusive Elementary Educator (2)

This course covers broadly the context, process, and content of collaboration and teamwork in the schools with a specific focus on the inclusion of students with disabilities and special needs in general education classrooms. Other topics include co-teaching, problem solving, and conflict resolution. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 543
Specialized Techniques for the Inclusive Elementary Educator (1)

Presents Information and skills necessary for meeting the specialized support needs of students with significant disabilities. Course is designed to assist the educator in becoming an effective member of a trans-disciplinary team that serves students with routine and emergency medical and physical needs and is taught from an inclusive perspective. Prerequisites: Admission to the Inclusive Elementary Educators Program.

Ed 580
Adolescent Learners in Inclusive Settings (2)

Focuses on principles of human learning and related practices for teaching in inclusive classrooms in the middle/high school setting. The psychology of learning in a school setting includes both individual and group generalizations, with an emphasis on the developmental tasks of adolescence. Examines the roles and functions of teachers as facilitators of learning, and as decision makers concerning pupil needs and achievement in inclusive middle/high school settings. Prerequisites: admission to SDEP program.

Ed 581
Inclusive Classroom Researcher (2)

Frames research questions concerning the principles, practices, promises, and problems of inclusive classrooms. Explores the philosophical and practical benefits of inclusive practices. Teacher networks, literature reviews and research design will provide the groundwork for collecting data throughout the program. Prerequisites: admission to SDEP.

***Ed 582**
Collaborative Teaming and the Special Education Process (4)

Introduction to special education law and processes that prepares future teachers to actively participate, plan and facilitate IEP and school team meetings. Includes an overview of state and federal laws/regulations, the IEP process and special education service delivery systems. Explores collaborative teaming processes in middle and secondary school settings. Prerequisites: Psy 311 and admission to SDEP program.

***Ed 583**
Study Skills and Learning Strategies (2)

Examines typical secondary class demands and instructional methods to enable students with disabilities and other low achievers to become independent learners. Emphasis on content enhancement tools to increase accessibility of content as well as instructional methods for teaching study

skills and learning strategies. Includes models and methods for infusing this instruction into the secondary curriculum. Prerequisites: admission to SDEP program.

***Ed 584**
Advocacy and Transition Planning (2)

Focuses on student support and advocacy, school-family collaboration and transition planning. Concepts and curriculum related to person-centered planning and teaching self-determination skills addressed. Examines collaborative skills needed to empower students, families, communities, service agencies, and other support systems and facilitate inclusive practices in secondary settings. Prerequisites: admission to SDEP program.

***Ed 585**
Instructional Planning for Inclusive Classrooms (4)

Addresses principles and skills for organization and presentation of grades 6-12 inclusive classroom instruction. Includes: student needs analysis, unit planning using backward design, direct and indirect instructional techniques that incorporate state and national standards in teaching a diverse group of adolescent learners. Prerequisites: admission to SDEP program.

Ed 586
Collaborative Teaching (2)

Students will study practices and techniques that enhance instructional collaboration and consultation among general education and special education teaching professionals. Models and methods for supporting students with disabilities in middle and secondary school general education classrooms will be explored. Prerequisites: admission to SDEP and (Advocacy and Planning with Secondary Students, Collaborative Teaming).

***Ed 587**
Inclusive Educational Research and Leadership (2)

Critically reviews the principles, practices, promises, and problems of inclusive education. Teacher candidate work samples, compilation and analysis of action research data, and educational leadership project provide culminating experiences blending the dual perspectives of general and special education and benefits of inclusive practices in teaching content to all students. Prerequisites: admission to SDEP program.

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 faculty 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 for youth and for adults, 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 and 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 PreK-12 school, higher education, 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 ELP 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.

Educational Leadership and Policy

ELP 318

Introduction to 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. Course includes an additional, concurrent 30-hour minimum field project requirement.

ELP 324

Introduction to Spiritual Leadership (4)

An introductory exploration into spirituality and its connection to leadership. The meaning of engaged spiritual leadership will be examined through such themes as: identity, paradox, interconnectedness, and sustainability. A community-based field project offers an opportunity to examine leadership issues through the lens of spirituality.

ELP 348

Introduction to Global Political Ecology (4)

In order to grasp the emerging discipline of political ecology, engages in discussions regarding the following: impact of globalization on human and non-human communities; relationship between poverty and environmental degradation; distribution of resource use and commodification in the global North and global South, and the relationship of these issues in our personal lives.

ELP 349

Gandhi, Zapata and New Agrarianism (4)

This course explores the emergence of "new agrarianism" by examining the social, political, economic and ecological implications of agriculture, and the revolutionary efforts of Zapata and Gandhi against the abuses of modern industrial practices. Recent philosophical and ecological models of new agrarianism are introduced, with emphasis on local food systems.

ELP 350

Introduction to Leadership for Sustainability (4)

Multi-media seminar and discussion course reviews, analyzes and critiques the history, politics and rhetoric of sustainability. Four key themes are covered: issues surrounding the Johannesburg Summit 2002; growing conservation economy in the Pacific Northwest; the issue of indigenous cultures and sustainability, and a critical review of the emergence and future of transnational civil society. Examines the very idea of local, regional, and global and discusses the role social movement networks, information society, and globalization play in meaningful social change and leadership.

ELP 351

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 the same course as WS 351 and may only be taken once for credit. Course includes an additional, concurrent 30 hour minimum field project requirement.

ELP 356

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. ELP 356 includes an additional, concurrent 30 hour minimum field project requirement.

ELP 362

Introduction to School and Community Relations (4)

Major emphasis will be on exploring the ways schools interact with parents, citizens and special interest groups that lead to building a diverse community. Course includes an additional, concurrent 30-hour minimum field project requirement.

ELP 401/501

Research (Credit to be arranged.)

ELP 402/502

Independent Study (Credit to be arranged.)

ELP 403/503

Thesis (Credit to be arranged.)

ELP 404/504

Cooperative Education/Internship (Credit to be arranged.)

ELP 405/505

Reading and Conference (Credit to be arranged.)

ELP 406/506

Special Problems (Credit to be arranged.)

ELP 407/507

Seminar (Credit to be arranged.)

ELP 408/508

Workshop (Credit to be arranged.)

ELP 409/509

Practicum (Credit to be arranged.)

ELP 410/510

Experimental Course (Credit to be arranged.)

ELP 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.

ELP 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: ELP 429/529.

ELP 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: ELP 429/529 plus two other courses in the series.

ELP 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: ELP 429/529.

ELP 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 discuss how the organization's culture and needs affect the selection and success of training management efforts. Prerequisite: ELP 429/529.

ELP 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: ELP 429/529.

ELP 439/539**Developing Training Materials (3)**

Focus on the theories, knowledge and skills necessary to plan, develop and use effective participant and presentation training materials that enhance adult learning in training and development settings. Study the linkage of instructional design, adult learning representational systems and graphic design theories and how materials increase transfer of learning. In addition, examine writing issues relevant to effective communication, the selection and use of production methods, and project plans for training materials.

ELP 444/544**Instructional Design for Online Based Training (3)**

Examine the adult learning instructional strategies, interactive techniques, information architecture, and user-interface design principles used in online training. Analyze audience learning and experience preferences, training requirements, and content objectives and use that information to

choose appropriate online training strategies and methods.

ELP 445/545**Building Online Training (4)**

Examine development methodologies/processes, principles of task identification, risk mitigation, technical architecture, creative tools, and project management strategies used in building online training courses. Apply learning theory and project management principles to development of online trainings.

ELP 446/546**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.

ELP 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.

ELP 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.

ELP 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.

ELP 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.

ELP 454/554**Philosophy of Education (4)**

Study and comparison of the philosophical bases of educational ideas and of the educational implications of philosophical thought. ELP 554 includes an additional, concurrent 30 hour minimum field project requirement.

ELP 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. ELP 557 includes an additional, con-

current 30 hour minimum field project requirement.

ELP 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.

ELP 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.

ELP 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 preschool through adults.

ELP 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.

ELP 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, sociometry, and objective tests and scales; computer application in the use of selected designs. Prerequisite: ELP 512.

ELP 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; stan-

standardized tests; using performance standards; planning and constructing classroom selection; supply and performance tests; portfolio assessment; evaluating test items. Prerequisite: graduate standing.

ELP 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.

ELP 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."

ELP 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.

ELP 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.

ELP 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.

ELP 521

Adult Learning and Motivation (4)

An examination of the complex interaction among adult development, motivation, and learning. Attention is focused on the intra- and interpersonal dynamics that motivate human behavior in general, and how they specifically motivate adult learning and behavior within a wide variety of educational settings. Course includes additional, concurrent 30-hour minimum field project requirement. Prerequisite: graduate standing. Completion of ELP 520, Developmental

Perspectives on Adult Learning, highly recommended.

ELP 522

Teaching Diverse Adult Learners (4)

An examination of the theoretical, philosophical, and practical aspects of teaching adult students regarding issues of difference and diversity in the classroom. Students will develop skills in planning, delivering, and evaluating individual and group learning activities in a wide variety of learning environments. Course includes additional, concurrent 30-hour minimum field project requirement. Prerequisite: graduate standing. Completion of ELP 520, Developmental Perspectives on Adult Learning, highly recommended.

ELP 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.

ELP 524

Spiritual Leadership for Sustainable Change (4)

This course explores how spirituality is integrated into teaching and learning, and into the work of engaged citizens. Spiritual leadership is explored through such themes such as: authenticity, identity, paradox, relationships, and sustainability. Community-based learning provides an opportunity to examine leadership and sustainability issues through a spiritual lens.

ELP 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.

ELP 526

Facilitating Student Success in Postsecondary Education (4)

Provides an introduction to theory and research related to factors and conditions that affect student 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.

ELP 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.

ELP 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.

ELP 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.

ELP 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.

ELP 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.

ELP 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.

ELP 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, stu-

dents, staff, services, and patterns of organization of the public community college.

ELP 542

Introduction to Service-Learning: Theoretical and Pedagogical Perspectives in Postsecondary Education (4)

Fundamental principles and practices of service-learning in postsecondary education. Service-learning pedagogy, its relationship to adult development, historical foundations in educational institutions, and civic education. Resources and organizations, and issues of race, class, gender, and power in service-learning. Required participation in a service-learning project provides practice in application of theories.

ELP 543

Service-Learning and Community Based Learning in Postsecondary Educational Leadership and Policy: Domestic Issues (4)

Service-learning in postsecondary educational institutions, their leadership, and policy. Role, organization, and policy of service-learning in different postsecondary institutions, from community colleges through graduate schools, and the varying ways in which service-learning is structured, researched, and assessed. Practical and theoretical concerns in an applied service-learning experience in the metro area. Challenges and opportunities of partnerships between academic institutions and community-based organizations. Implications of service-learning for students, faculty, partners, and the community in the context of civic engagement, social justice, and social change.

ELP 548

Advanced Global Political Ecology (4)

In order to grasp the emerging discipline of political ecology, we cover the following themes: the impact of globalization on human and non-human communities; the relationship between poverty and environmental degradation; the distribution of resource use and commodification in the global North and global South; and the relationship of these issues in our personal lives. Students apply these concepts in real life through a multi-media study and presentation of a commodity in terms of its production, distribution and consumption.

ELP 549/649

Service-Learning & Community Based Learning in Postsecondary Educational Leadership & Policy: International Issues (4)

Service-learning in postsecondary educational institutions, their leadership, and policy. Role, organization, and policy of service-learning in different postsecondary institutions, from community colleges through graduate schools, and the varying ways in which service-learning is structured, researched, and assessed. Practical and theoretical concerns in an applied service-learning experience abroad. Challenges and opportunities of international service-learning. Implications of service-learning for students, faculty, partners, and the community in the context of civic engagement, social justice, and social change

ELP 550

Advanced Leadership for Sustainability (4)

This multi-media seminar and discussion course will review, analyze and critique the history, politics and rhetoric of sustainability. Four key themes are covered within the rubric of leadership for sustainability: the issues surrounding the Johannesburg summit, 2002, the growing conservation economy in the Pacific Northwest, the issue of indigenous cultures, and sustainability.

Students apply these concepts in real life by developing a wildest dream project in sustainability and outlining social, natural and economic capital needed to implement it.

ELP 558

Educational Leadership (4)

Analysis of leadership theories, skills, and techniques as applied to the organization and administration of public education. Prerequisite: graduate standing.

ELP 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: ELP 569.

ELP 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.

ELP 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.

ELP 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.

ELP 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.

ELP 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

ELP 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.

ELP 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.

ELP 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; ELP 569.

ELP 571

Teaching, Learning, and Curriculum (4)

Examines the complex relationships between staff evaluation, individual professional development, staff development, and effective teaching, 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: ELP 570.

ELP 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: ELP 571.

ELP 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.

ELP 574

Education Leadership Project II (1)

Focus on the implementation, in a school or agency setting, of an Educational Leadership Project dem-

onstrating 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, ELP 573.

ELP 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, ELP 573 and ELP 574.

ELP 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.

ELP 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.

ELP 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 col-

lective 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.

ELP 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.

ELP 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.

ELP 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.

ELP 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 ELP 570.

ELP 583

Teaching, Learning and Curriculum II (2)

Examines the complex relationships between staff evaluation, individual professional development, staff development, and effective teaching, learn-

ing, 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, ELP 570 and ELP 582. Must be taken concurrently with ELP 572.

ELP 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.

ELP 601

Research (Credit to be arranged.)

ELP 602

Independent Study (Credit to be arranged.)

ELP 603

Dissertation (Credit to be arranged.)

ELP 604

Cooperative Education/Internship (Credit to be arranged.)

ELP 605

Reading and Conference (Credit to be arranged.)

ELP 606

Special Problems/Projects (Credit to be arranged.)

ELP 607

Seminar (Credit to be arranged.)

ELP 608

Workshop (Credit to be arranged.)

ELP 609

Practicum (Credit to be arranged.)

ELP 610

Selected Topics (Credit to be arranged.)

ELP 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.

ELP 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.

ELP 801

Research (Credit to be arranged.)

ELP 802

Independent Study (Credit to be arranged.)

ELP 804

Cooperative Education/Internship (Credit to be arranged.)

ELP 805
Reading and Conference
 (Credit to be arranged.)

ELP 806
Special Problems (Credit to be arranged.)

ELP 807
Seminar (Credit to be arranged.)

ELP 808
Workshop (Credit to be arranged.)

ELP 809
Practicum (Credit to be arranged.)

ELP 810
Experimental Course
 (Credit to be arranged.)

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 non-fiction. 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 for K-12 including instructional design and criteria for quality print and non-print media. Learn graphic techniques and uses of computers and technology in production of instructional media. Research current practices in library and classroom instruction and communication.

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 evaluation 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 (6)

Beginning student teaching in a library media center under the direction of a supervising library media teaching 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 manage-

ment and discipline of students. 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 Library 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 Library 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 Library 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: Library 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: Library 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: Library 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: Library Media Endorsement or consent of instructor.

Lib 587

Video Production (3)

Study and practice video production techniques, including storyboarding, camera techniques, editing, and preparing video for various educational settings. Design activities that engage students in digital video production and produce videos for library or classroom use.

Lib 588

21st Century Technologies for Education (3)

Analyze the role of computers and advanced technology in the library media center and classroom. Focus on new and emerging technologies to enhance classroom instruction for all learners. Develop curricula that effectively use media and technology to engage and support students.

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.)**

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 518**Language and Literacy Development, K-8 (3)**

Examine the connection between early childhood oral language acquisition and the development of reading and writing skills. Discuss relevant language and literacy research, differences in language and literacy development, foundations of language development in the brain and its implication as regards phonological skills, grammatical knowledge, vocabulary, comprehension, and writing.

Read 519**Language Study for Teachers, K-12 (3)**

In-depth knowledge in linguistics important to literacy teachers working with all students. Topics include fundamentals in: phonetics and phonology; morphology; syntax; semantics; pragmatics and language use in society; and classroom discourse. Gain important knowledge to facilitate

instructional planning and delivery in phonetics instruction, vocabulary development, sentence structure, word meaning and choice in comprehension, questioning strategies, and textual structures for culturally diverse students.

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 531**Teaching the Struggling Adolescent Reader (3)**

For middle and high school teachers who want to experience hands-on teaching and learning strategies for improving motivation and learning in the core subject areas. As part of a collaborative effort, teachers will work with each other to develop tutoring plans and activities in curriculum materials to be used in teaching struggling readers in their own classroom. Recommended prerequisites: enrollment in ReadOregon Reading Endorsement program or GSE Literacy or master's program.

Read 532**Writing across the Curriculum, Grades 4-12 (3)**

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 materials to use with curriculum materials in all school subjects.

Read 533**Boy Readers/Boy Writers (3)**

Critically analyze and implement research-based practices in reading and writing as they relate to boys' learning style. Demonstrate appropriate professional knowledge, skills and dispositions through reading critical theory in instructional strategies that benefit boy's needs. Use evidence to solve problems of practice and make educational decisions.

Read 534**Classroom Reading and Writing Assessment, K-8 (3)**

Examine a variety of literacy assessment vehicles and how they can be used to develop effective instruction. Discuss relevant literacy assessment research and its implications in the classroom. Explore word knowledge, reading fluency, comprehension and composition, Discuss administering and interpreting assessments and their broader uses for increasing student learning.

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 develop-

ment; (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)**

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 ELL's academic and English literacy development in an authentic and culturally responsive environment.

Read 571**Principles/Methods of Diagnosis and Assessment K-12 (3)**

Literacy theory (review/overview of the psychological, sociological, and linguistic foundations of reading processes and instruction, including developmental stages of literacy). Psychometrics (the science of measurement in the social sciences). Measures of reading proficiency and reading achievement (with specific examples of standardized reading measures and discrete-point reading proficiency measures). Authentic literacy assessment (with specific examples of authentic reading assessment tasks). Literacy assessment and students with special needs (English language learners, students with learning disabilities, talented and gifted students). Test ethics and how assessment results are used (including communication with various stakeholders). Recommended prerequisites: enrollment in ReadOregon Reading Endorsement program or GSE Literacy or master's program.

Read 580**School Reading Program Leadership (3)**

Overview of human resources within the context of health care organizations. Focus on the practical application of human resources management principles in the work setting through discussion of situations common in health care environments. Elements of the situation evaluated from the health care employee and health care manager perspectives. Examples of techniques, forms, and tools will be discussed.

Read 582**Reading Leadership in Middle and High Schools (3)**

Designed for administrators and teachers in leadership roles in middle and high schools. Explores ways to improve reading achievement in schools by identifying the school's existing strengths, apply current research and practice, and creating an action plan. Recommended prerequisite: enrollment in ReadOregon Reading Endorsement program or GSE Literacy or master's program.

Special Education

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 417
Introduction to Special Education (4)
 Provides an introduction to the field of special education and the use of evidence-based teaching practices in special education. Students explore particular career options of interest and participate in a community-based learning experience in public school settings with learners who are at-risk or have special education needs. Recommended prerequisite (or concurrent enrollment): Psy 311, SpEd 418.

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 419/519
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. Specific attention is given to the various federal and state laws, rules, and regulations regarding the prohibition of discrimination about which Oregon teachers must be knowledgeable as required by Oregon Revised Statute 342.123.

SpEd 455/555
Working With LEP Children Who Have Special Needs (2)
 Examine the current research in special education 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 Kiwanis 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 environments and activities to include all children and transition planning. Specific attention is given to the various federal and state laws, rules, and regulations regarding the prohibition of discrimination about which Oregon teachers must be knowledgeable as required by Oregon Revised Statute 342.123.

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 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 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. Prerequisite: 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 collaborative 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 impaired, this course provides an overview of basic information about children and youth who are visually impaired. Basic programming components and implications for conceptual and motoric development. Basic curricular components necessary for 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 impaired 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 543**Reading and Literacy—Visually Impaired Learners (3)**

This course provides an overview of language development and literacy instruction from pre-reading through adolescence. Age-appropriate methods for literacy instruction will be discussed, with emphasis on similarities and differences between sighted print readers and readers with visual impairments, including blindness. Both conventional and functional literacy will be addressed.

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

child who has multiple disabilities. 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 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 students with disabilities (elementary/young adult); helps participants gain knowledge which strengthens vocational success for persons with disabilities; and program models train persons with disabilities in transition from school to community life. 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.

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 568**Advanced Behavior Management (3)**

Course for educational professionals serving students with challenging behavior. Focuses on a continuum of behavioral intervention in schools including functional behavioral assessment and positive behavioral supports for students with challenging behavior. Prerequisites: 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, nor-

mal 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 Multiple 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 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 related to children and youth with disabilities. Prerequisite: SpEd 418/518.

**SpEd 594
Assessment Methods and Classification in Infant Mental Health (3)**

Develop knowledge and skills to complete the assessment process of infants, toddlers and their caregivers through multiple sources of information within a culturally relevant context. Topics include selection of tools and methods for information collection, methods for screening and assessment, and use of classification systems within the mental health system. Prerequisite: admission to Infant Toddler Mental Health Graduate Certificate Program.

**SpEd 595
Prevention and Intervention in Infant Mental Health (3)**

Concepts of early intervention and prevention with the infant-toddler mental health perspective. Examines the range of interventions used in the field of infant mental health. Emphasis on the importance of treating infants and toddlers in the context of their families and communities. Intervention strategies for those targeted at children with psychosocial/relational and developmental disturbances as well as those determined to be at risk. Includes a review of international,

national, and regional established and pilot programs in early intervention and prevention. Assess and critically evaluate the current science around treatment efficacy of various interventions. Prerequisite: admission to Infant Toddler Mental Health Graduate Certificate Program.

**SpEd 596
Topics in Special Education Research (3)**
Specialized topics in special education focused on the scientific process and the development of research-based practice. Research regarding theories, interventions, instructional strategies, curriculum, and assessment are examined for each topic. Sections address topics such as: Literacy, English Language Learners, Positive Behavior Intervention Supports and Students with Significant Disabilities.

**SpEd 597
Topics in Special Education Issues and Practices (3)**
Specialized topics in special education focused on issues and practices in the education of students with disabilities. Current practices and issues, evidence-based practices, the use of research and assessment to understand problems, and the implementation and evaluation of interventions are examined for each topic. Topics such as the following are included: Literacy, English Language Learners, Positive Behavior Intervention Supports, Students with Significant Disabilities. Prerequisites: SpEd 596.

**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

RENJENG SU, DEAN
JAMES HOOK, ASSOCIATE DEAN
MARCIA FISCHER, ASSISTANT DEAN
PAMELA GESME MILLER, ASSISTANT DEAN
SUITE 500, ENGINEERING BUILDING
www.pdx.edu/cecs/



B.S.—Civil Engineering, Computer Engineering, Computer Science, Electrical Engineering, Environmental 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 and Technology Management, Mechanical Engineering, and Materials Science and Engineering
M.Eng.—Civil and Environmental Engineering, Civil and Environmental Engineering Management, Engineering and Technology Management (Option in 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, Mechanical Engineering, Technology Management
Ph.D.—Participating college in Systems Science Doctoral Program
Ph.D.—Participating college in Environmental Sciences and Resources Doctoral Program
Graduate Certificates

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 educa-

tional 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, environmental 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, environmental engineering and mechanical engineering are accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 - telephone: (410) 347-7700. The computer science program is accredited by the Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 - telephone: (410) 347-7700.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Engineering and Computer Science's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Policy on admission to undergraduate programs

Students may declare engineering or com-

puter 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, environmental 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. Students apply for formal department admission one to two terms before completing all eligibility requirements. Specific department application deadlines, criteria for admission and applications are available on respective department websites.

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, environmental 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.

Please see department websites for more specific admissions information.

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 & technology management, manufacturing engineering, materials science and engineering, and systems engineering.

Ph.D. programs are available in civil and environmental engineering, computer science, electrical and computer engineering, mechanical engineering, and technology management.

In addition, the Department of Engineering and Technology Management in the Maseeh College of Engineering and Computer Science participates in the single-discipline option of the Systems Science Ph.D. Program and offers a discipline-oriented doctoral degree.

Graduate Certificates are also available in select departments.

Oregon Master of Software Engineering

**Suite 120
Fourth Avenue Building
503-725-2900
www.pdx.edu/omse**

**M.S.E.—Master of Software Engineering
Graduate Certificate in Software Engineering**

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 engineers in the high technology industry.

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.

More information about the Oregon Master of Software Engineering program is located on our Web site at www.pdx.edu/omse.

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);
- 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 Software Project Management
OMSE 513 Professional Communication Skills for Software Engineers
OMSE 521 Using Metrics and Models to Support Quantitative Decision Making
OMSE 525 Software Quality Engineering
OMSE 531 Software Requirements Engineering
OMSE 532 Software Architecture and Domain Analysis
OMSE 533 Software Design Techniques
OMSE 534 Software Estimating
OMSE 535 Software Implementation and Testing
OMSE 551 Strategic Software Engineering
OMSE 555 Software Engineering Practicum I
OMSE 556 Software Engineering Practicum II

Systems Engineering

**Suite 500, Engineering Building
503-725-4262
www.cecs.pdx.edu/Systems/**

**M.Eng.—Systems Engineering
Graduate Certificate**

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

For both the M.Eng. and Grad Certificate, a minimum of 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

Master of Engineering in Systems Engineering. A total of 45 credits: 16 in sys-

tems core; 16 in elective speciality and related engineering areas; 9 in internship/project; and 4 in integrative workshop.

	Credit
Systems core	16
Elective speciality and related engineering areas	16
Integrative workshop	4
Project.....	9
Total	45

Graduate Certificate in Systems Engineering Fundamentals. A total of 16 credits: same as master's systems core.

Civil and Environmental Engineering

Engineering Building
1930 SW 4th Ave., Suite 200
Email: ceeddept@cecs.pdx.edu
Phone: 503-725-4282
Web: www.pdx.edu/cee
 B.S.—Civil Engineering
 B.S.—Environmental Engineering
 Minor in Environmental Engineering
 M.S.—Civil and Environmental Engineering
 M.Eng.—Civil and Environmental Engineering
 Ph.D.—Civil and Environmental Engineering
 Ph.D.—participating department in Systems Science Doctoral Program
 Graduate Certificate in Transportation Engineering
 Graduate Certificate in Hydrology
 Graduate Certificate in Sustainability

Civil and environmental engineers plan, design, and manage the construction and operation of public and private facilities, including highways and transportation systems, water and wastewater distribution systems, power plants, buildings, and dams. They are involved in predicting the quantity of water available for human use and in improving the quality of surface water, rivers, lakes, reservoirs, estuaries, and ground water systems. In addition they are involved in understanding and improving air quality impacted by industrial, transportation and other pollution sources.

Undergraduate programs

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

About the B.S. in Civil Engineering (BSCE)

The BSCE degree includes required courses in the analysis and design of structures, applied hydraulics, surveying, soil mechanics and foundations, engineering project management, transportation engineering and environmental/water resources engineering.

Students often choose a speciality area in their senior year: structural analysis and design, environmental engineering, water resources, transportation engineering or geotechnical engineering. Students are encouraged to speak with faculty members in speciality areas to find out more about these fields.

The BSCE curriculum at Portland State University is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 – telephone: 410-347-7700. This national organization sets standards for engineering education defined in terms of curricular content, quality of faculty, and adequacy of facilities.

BSCE Program Educational Objectives

Educational objectives describe the “career and professional accomplishments that the program is preparing graduates to achieve” (ABET, 2010) within a few years of their graduation.

The educational objectives of the Civil Engineering program at Portland State University are as follows:

Graduates are expected to practice civil engineering responsibly and ethically by (1) working effectively in the professional engineering community and (2) continuing to learn and enhance their abilities in civil engineering.

BSCE Program Outcomes

Graduates of the Civil Engineering program at Portland State University will have the skills and abilities to prepare them to begin

professional practice or to succeed in graduate studies.

Graduates will have:

(A) An ability to apply principles of mathematics, science, and engineering to the analysis and design of civil engineering projects.

(B) An ability to design and conduct experiments, as well as to analyze and interpret data.

(C) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.

(D) An ability to participate in projects that cross disciplines and to function on multi-disciplinary teams.

(E) An ability to identify, formulate, and solve engineering problems.

(F) An understanding of the professional and ethical responsibility of engineers in a broad societal context.

(G) An ability to communicate effectively.

(H) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context.

(I) A recognition of the need for, and an ability to engage in continuing professional development and life-long learning.

(J) A knowledge of relevant contemporary issues.

(K) An ability to use the modern techniques, skills, and engineering tools necessary for engineering practice.

(L) An ability to apply knowledge in the following civil engineering discipline areas: structural, geotechnical, environmental/water resources, and transportation.

(M) An awareness of the need for professional registration in career development.

About the B.S. in Environmental Engineering (BSENE)

The BSENV program provides training for engineers to preserve the natural environment – an especially important part of our culture in Portland and in the state of Oregon. Oregon prides itself on its environmental commitments and efforts toward living sustainably. This degree focuses on the fundamentals of environmental and water resources engineering with recommended tracks in geo-environmental, surface water hydrology and remote sensing, surface and groundwater water quality, groundwater hydrology, or air quality. Many of the required courses in the program are interdisciplinary drawing from the Departments of Chemistry, Mathematics and Statistics, Environmental Science and Management, Physics, Geology and Biology.

The BSENV curriculum at Portland State University is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 – telephone: 410-347-7700. This national organization sets standards for curricular content, quality of faculty, and adequacy of facilities.

BSENV Program Educational Objectives

Educational objectives describe the “career and professional accomplishments that the program is preparing graduates to achieve” (ABET, 2010) within a few years of their graduation.

The educational objectives of the Environmental Engineering program at Portland State University are as follows:

Graduates are expected to practice environmental engineering responsibly and ethically by (1) working effectively in the professional engineering community and (2) continuing to learn and enhance their abilities in environmental engineering.

BSENV Program Outcomes

Program outcomes are goals that describe our expectations as BSENV students graduate. Graduates of the Environmental Engineering program will have the skills and abilities to prepare them to begin professional practice or to succeed in graduate studies.

Graduates will have:

(A) An ability to apply principles of mathematics, science, and engineering to the analysis and design of environmental engineering projects.

(B) An ability to design and conduct experiments, as well as to analyze and interpret data.

(C) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.

(D) An ability to participate in projects that cross disciplines and to function on multi-disciplinary teams.

(E) An ability to identify, formulate, and solve engineering problems.

(F) An understanding of the professional and ethical responsibility of engineers in a broad societal context.

(G) An ability to communicate effectively.

(H) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context.

(I) A recognition of the need for, and an ability to engage in continuing professional development and life-long learning.

(J) A knowledge of relevant contemporary issues.

(K) An ability to use the modern techniques, skills, and engineering tools necessary for engineering practice.

(L) An awareness of the need for professional registration in career development.

Admission Process - BSCE and BSENV

Students may declare civil or environmental engineering as their major at any time after enrolling at Portland State University. However, students must be admitted formally to the BSCE or BSENV program before they will be allowed to enroll in restricted, upper-division courses offered by the program. Applications for the BSCE and BSENV programs are online at www.pdx.edu/cee. In addition to the Departmental online application form, students transferring from other institutions must also apply for admission to PSU and submit one copy of their transcripts to the PSU Office of Admissions and an additional copy to the Department of Civil and Environmental Engineering.

Application Deadlines - BSCE and BSENV

Fall term - April 15

*Winter term - September 15

*Spring term - December 15

*Due to course flow and prerequisites, admission to the BSCE or BSENV program is recommended for the Fall term only. However, mid-year admission is occasionally possible and will be determined on a case-by-case basis.

Admissions Eligibility - BSCE

To be eligible for admission to the BSCE program, each student must meet the following minimum requirements:

1. Complete with a minimum grade of C the following courses: Mth 251, 252, 254, 256, 261; Ch 221, 222, 227, 228; Ph 221, 222, 223, 214, 215, 216; CE 111, 112, 115, 211, 212; EAS 211, 212, 215; UnSt (27 credits) or transfer 27 credits of arts and letters, including WR

121, WR 227 and Comm 100 or Comm 220 (recommended).

2. Have a minimum GPA overall of 2.33.
3. Complete a minimum of 90 credits.

Admissions Eligibility - BSENV

To be eligible for admission to the BSENV program, each student must meet the following minimum requirements:

1. Complete with a minimum grade of C the following courses: Bi 234, 235; Mth 251, 252, 254, 256, 261; Ch 221, 222, 227, 228; Ph 221, 222, 223, 214, 215, 216; CE 111, 112, 115; EAS 211, 212, 215; UnSt (27 credits) or transfer 27 credits of arts and letters, including WR 121, WR 227 and Comm 100 or Comm 220 (recommended).
2. Have a minimum GPA overall of 2.33.
3. Complete a minimum of 90 credits.

Selective Admission - BSCE and BSENV

To ensure the highest quality of our programs, the CEE Department has a selective admission process. This may limit the number of applicants accepted to our programs even if they meet the minimum requirements. The selective admission process follows these guidelines:

1. The number of applicants to the program will be limited for Fall, Winter and Spring admission. The admission limit is based on available CEE resources.
2. A committee of CEE faculty and staff make admission decisions after reviewing each applicant's admission materials.
3. Factors that are taken into account in ranking students are:
 - a. Individual course grades and overall GPA for required lower-division courses.
 - b. Schools attended. Priority, within reasonable limits, will be given to PSU students.
 - c. Other course grades and overall GPA.

Continuation Criteria - BSCE and BSENV

After admission, students will be expected to make satisfactory progress toward their declared degree (BSCE or BSENV) 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. Students will be placed on probation when their term GPA is below 2.00 or their progress toward the degree is less than 12 credits per academic year.
3. Students placed on probation for two consecutive terms or for a total of three terms will be suspended from their degree program. Students also will be suspended if not enrolled in engineering courses for three consecutive terms.
4. Students who are suspended must wait at

least one term before reapplying.

Pass/No Pass Grading Policy - BSCE and BSENV

All courses specifically required by the University or by the Department of Civil and Environmental Engineering must be taken for a letter grade unless a required course is only offered with a pass/no pass option.

BSCE Degree Requirements

BSCE majors must complete the following University (see page 39) and department degree requirements as follows for their upper division engineering coursework:

1. Junior and senior engineering courses must be completed with a minimum grade of C-;
2. Prerequisite courses must be passed with a grade of C- or better in order to move ahead in the sequence;
3. The student's cumulative PSU GPA must be 2.33 or higher to graduate from the BSCE program;
4. Any deviation from the required courses including engineering and mathematics substitutions must be approved in writing by the chair of the department.

Freshman Year*	Credits
CE 111 Introduction to Civil and Environmental Engineering	3
CE 112 Civil and Environmental Engineering Computations.....	3
CE 115 Civil Engineering Drawing and Spatial Analysis	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	46

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
CE 315 CEE Profession Seminar.....	1
CE 321 CEE Materials	4
CE 361 Fluid Mechanics	4
CE 324 Elementary Structural Analysis	4
CE 325 Indeterminate Structures I	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 & Scientists	4
EC 314 [†] Private and Public Investments Analysis ..	4

Senior Year	Credits
CE 444 Geotechnical Design	4
CE 454 Urban Transportation Systems.....	4
CE 484 Engineering Project Management	3
CE 494 Civil Engineering Design	3
CE 432 Steel Design OR CE 434 Principles of Reinforced Concrete	4
Approved civil engineering electives**.....	19
Upper Division Cluster	8
Total	45

The entire BSCE curriculum is 191 credit hours.

[†]Ec 314 is a required course that can be taken as a part of some upper-division clusters.

*Transfer students should follow the requirements as listed under the "Eligibility - BSCE" section above.

**Approved Civil Engineering Electives:
CE 401 (4 credits maximum), CE 403 (4 credits maximum), CE 404 (4 credits maximum), CE 405 (4 credits maximum), CE 406 (4 credits maximum), CE 407/507 (3 credits maximum), CE 410-499, and CE 510-599. Courses outside CEE Department require prior approval of CEE Chair.

BSENV Degree Requirements

BSENV majors must complete the following University (see page 39) and department degree requirements for their upper division engineering coursework.

1. Junior and senior engineering courses must be completed with a minimum grade of C-;
2. Prerequisite courses must be passed with a grade of C- or better in order to move ahead in the sequence;
3. The student's cumulative PSU GPA must be 2.33 or higher to graduate from the BSENV program;
4. Any deviation from the required courses including engineering and mathematics substitutions must be approved in writing by the chair of the department.

Freshman Year*	Credits
CE 111 Introduction to Civil and Environmental Engineering	3
CE 112 Civil and Environmental Engineering Computations	3
CE 115 Civil Engineering Drawing and Spatial Analysis	3
Ch 221, CH 222 General Chemistry	8
Ch 227, 228 General Chemistry Laboratory	2
Mth 251, 252 Calculus I, II	8
Mth 261 Intro Linear Algebra	4
Bi 234 Elementary Microbiology	4
Bi 235 Elementary Microbiology Lab.....	2
Freshman Inquiry	15
Total	52

Sophomore Year*	Credits
EAS 211 Statics	4
EAS 212 Strength of Materials.....	4
EAS 215 Dynamics	4
Mth 254 Calculus IV	4
Mth 256 Applied Differential Equations	4
Ph 221, 222, 223 General Physics (with calculus) ..	9
Ph 214, 215, 216 Physics Laboratory	3
Sophomore Inquiry	12
Total	44

Junior Year	Credits
ESM 320, 321, Analysis of	

Environmental Systems I, II.....	8
ESM 322 Environmental Risk Assessment.....	4
ESM 323, 324, 325 Environmental Systems Laboratory	6
ME 321 Engineering Thermodynamics	4
CE 315 CEE Profession Seminar.....	1
CE 345 Environmental Soil Mechanics.....	2
CE 361 Fluid Mechanics	4
CE 362 Hydraulics	4
CE 364 Water Resources Engineering.....	4
CE 371 Environmental Engineering.....	4
G 301 Geology for Engineers	3
Stat 451 Statistics for Engineers and Scientists.....	4
Total	48

Senior Year	Credits
CE 474 Unit Operations of Environmental Engineering	4
CE 480 Chemistry of Environmental Toxins.....	4
CE 484 Civil Engineering Project Management & Design I.....	3
CE 494 Civil Engineering Project Management & Design II.....	3
EC 314 [†] Private and Public Investments Analysis ..	4
Upper Division Cluster	8
Approved Environmental Engineering Electives**	18
Total	44

The entire BS curriculum in Environmental Engineering is 188 credit hours.

[†]Ec 314 is a required course that can be taken as a part of some upper-division clusters.

*Transfer students should follow the requirements as listed under the "Eligibility - BSENV" section above.

**There are approved tracks in geo-environmental engineering, surface water quality, surface hydrology and hydraulics, subsurface hydrology and contaminant transport, or air quality as follows (students are not restricted to these tracks and may select electives in any combination):

1. **Geo-environmental:** CE 440 [Geosynthetics], CE 445 [Geo-environmental with synthetics]
2. **Subsurface hydrology and contaminant transport:** CE 469 [Subsurface Hydrology], CE 463 [Soil and Groundwater Restoration], CE 571 [Subsurface Contaminant Transport]
3. **Surface water hydrology:** CE 464 [Hydrologic and hydraulic modeling], CE 467[Hydrologic and hydraulic design], CE 565 [Watershed hydrology]
4. **Surface water hydrodynamics and water quality:** CE 479 [Fate and Transport of toxics in Environment], CE 481 [Columbia River as a System], CE 482 [Introduction to Sediment Transport], CE 483 [Estuarine Circulation], CE 572 [Environmental Fluid Mechanical Transport], CE 576 [Environmental Fluid Mechanics], CE 578 [Water Quality Modeling]
5. **Air quality:** CE 488 [Air Quality], PH 375 [The earth's atmosphere], PH 471 [Atmospheric physics], PH 477 [Air pollution], PH 478 [Applications of air pollution modeling]

Minor in Environmental Engineering

A student wishing to minor in environmental engineering must complete the following courses with a minimum grade of C and a minimum GPA of 2.33: Mth 254, 256; Ph 221, 222, 223, 214, 215, 216; Ch 221, 222, 227, 228; CE 361, 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 BSCE or BSENVE programs. Students who complete the requirements for the minor may wish to apply for admission to these programs. BSCE and BSENVE students cannot minor in environmental engineering. Students planning to minor in environmental engineering should consult with an advisor in the Department of Civil and Environmental Engineering.

Honors Program - BSCE and BSENVE

The Civil and Environmental Engineering Honors Program gives highly motivated engineering students the chance to develop undergraduate degree programs that reflect their particular interests – many of these students go on to graduate school. Working closely with a CEE faculty advisor, Honors Program students choose a research area and complete an Honors thesis, usually during their senior year.

Honors Program Admissions Requirements:

- Completion of CEE Honors Program application form found on the CEE website (www.pdx.edu/cee);
- Completion of a minimum of 90 credit hours;
- Completion of courses required for admission to the BSCE or BSENVE programs;
- Minimum PSU GPA of 3.50

Interested students should apply by Spring quarter of the junior year but no later than the beginning of his/her senior year.

Upon acceptance into the Honors Program, the student will declare one of the following areas of interest within CEE 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 advisor. The advisor will work with the student to complete a written proposal for the Honors thesis research. The proposal requires Chair approval. 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.

Honors Program Graduation Requirements

- Completion of a written honors thesis in conjunction with a faculty adviser with a minimum grade of B+
- Presentation of research to CEE faculty/students in seminar format
- PSU GPA above 3.50

Note: The Honors thesis will count as a BSCE or BSENVE elective in the senior year: CE 403, Honors Thesis, 4 credit hours.

CEE Department Internship Program

The CEE Department Internship Program partners high-performing students admitted to the BSCE and BSENVE Upper Division Programs with local employers. These paid internships are great opportunities for students to put their knowledge to work and earn money while gaining invaluable job experience.

The internship models vary depending on student schedules and employer needs, but in general are either a 6-month full-time internship, or a blend of full time-over the summer followed by a part-time internship during the academic year. Students apply during their junior year for internships starting summer or fall terms. More information about the program and how to apply can be found on the website (<http://pdx.edu/cee/ceeinternship>).

Graduate programs

About the Master of Science in Civil and Environmental Engineering (MS)

The Master of Science in Civil and Environmental Engineering program 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. The program involves advanced courses in the areas of structural analysis and design, transportation engineering, water resources, environmental engineering, and geotechnical engineering, as well as science and mathematics. Flexibility is achieved by designing programs of study to meet individual needs. MS students must complete a thesis or research project conducted under the supervision of a faculty member. Please see the Degree Requirements section below for full details.

About the Master of Engineering in Civil and Environmental Engineering (MEng)

The Master of Engineering in Civil and Environmental Engineering program is a non-research based professional degree. MEng students may be full-time or part-time while working in the engineering field. These students complete an advanced degree without a thesis/project requirement and can also use internship credits toward their degree. Please see the Degree Requirements section below for full details.

Application Deadlines - MS

- Priority Fall - First Monday of January (for strongest consideration for funding as a Graduate Research or Teaching Assistant)

- Fall - April 1
- Winter - September 1
- Spring - November 1

Application Deadlines - MEng

- Fall - April 1
- Winter - September 1
- Spring - November 1

Admission Requirements - MS and MEng

Admission requirements for the MS and MEng degrees include a B.S./B.A. degree in an engineering field, science, or closely related area with a minimum GPA of 3.00. Courses should include calculus through differential equations, physics and chemistry, computer methods in engineering, and all the necessary prerequisites for the graduate courses that comprise the student's program of study. Applicants without these qualifications may be considered for conditional admission. To be considered for admission as a conditional student, the applicant must have a minimum GPA of 2.75. Applicants must also meet PSU graduate admission requirements. Please refer to Graduate Studies for these requirements. Application instructions for the MS and MEng programs are available at www.pdx.edu/cee.

Pass/No Pass Grading Policy - MS and MEng

All courses taken in the Department of Civil and Environmental Engineering by degree candidates must be taken for a letter grade, unless a course is only offered with a pass/no pass option. Courses outside the Department of Civil and Environmental Engineering may be taken pass/no pass only with the consent of the student's adviser. Non-degree seeking students may take Civil and Environmental Engineering courses pass/no pass with the consent of the instructor.

Degree Requirements - MS

MS students are required to complete tentative degree plans no later than the second term after admittance to the program. The degree plan must be approved by their advisor. An MS study plan form for this purpose is available on the CEE website (www.pdx.edu/cee). A revised degree plan should be submitted to the advisor for approval prior to any quarter in which the student plans to deviate from the existing plan on file with the Department. Coursework taken without advisor approval may not be accepted as part of the student's program. Students must also meet the University master's degree requirements.

The MS program consists of two options:
1. The thesis option consists of a total of 45

credit hours including 6-9 hours of CE 503 Thesis credits plus successful completion of a final oral examination covering the thesis. Coursework may include up to 6 hours of CE 501, 504, or 506;

2. The project option requires completion of 45 credit hours including 4 CE 501 Research credit hours on a research project that produces a report and technical presentation. Coursework may include up to 8 hours of CE 504, 505, or 506.

Student research is conducted under the supervision of faculty. Please see CEE faculty profiles on the CEE website (www.pdx.edu/cee) to learn about current faculty research areas.

CEE courses for which the student receives a grade of "C+" or lower will not be counted toward fulfilling the requirements, and a candidate is disqualified if he/she receives a grade of "C+" or lower in four CEE courses.

In both options, a minimum of 30 credit hours must be taken in the CEE Department unless otherwise approved by the Department Chair. To become a candidate for the MS degree, the student must successfully complete all departmental requirements for one of the options described above.

All other degree requirements for the MS program are established by PSU's Office of Graduate Studies. Please refer to Graduate Studies for information concerning advanced degree requirements, degree status, petition processes, thesis preparation, and final oral exam.

Degree Requirements - MEng

MEng students are required to complete tentative degree plans no later than the second term after admittance to the program. The degree plan must be approved by their advisor. An MEng study plan form for this purpose is available on the CEE website (www.pdx.edu/cee). A revised degree plan should be submitted to the advisor for approval prior to any quarter in which the student plans to deviate from the existing plan on file with the Department. Coursework taken without advisor approval may not be accepted as part of the student's program. Students must also meet the University master's degree requirements.

A total of 48 graduate credits are required for the MEng program. Coursework may include up to 8 hours of CE 501, 504, 505, or 506. Internship credits (CE 504) require a project and final report; these credits must be arranged in advance between the CEE faculty advisor and the student.

CEE courses for which the student receives a grade of "C+" or lower will not be counted toward fulfilling the requirements, and a candidate is disqualified if he/she receives a grade of "C+" or lower in four CEE courses.

A minimum of 30 credit hours must be taken in the CEE Department unless otherwise approved by the Department Chair. To become a candidate for the MEng degree, the student must successfully complete all departmental requirements as described above.

All other degree requirements for the MEng program are established by PSU's Office of Graduate Studies. Please refer to Graduate Studies for information concerning advanced degree requirements, degree status, and petition processes.

About the Doctor of Philosophy in Civil and Environmental Engineering (PhD)

The Ph.D. in Civil and Environmental Engineering program offers advanced courses in the areas of structural analysis and design, water resources and environmental engineering, transportation engineering, and geotechnical engineering. This program aims to educate technical experts to meet challenges related to enhancing infrastructure and the environment. Students learn about conducting research and solving technical problems that have an impact both regionally and globally. The PhD program culminates in a written dissertation representing an original contribution to knowledge in the field, significantly enlarging, modifying or reinterpreting what was previously known. Students work closely with their advisor, but PhD research is an original, independent investigation of the chosen research topic.

Application Deadlines - PhD

- Priority Fall - First Monday of January (for strongest consideration for funding as a Graduate Research or Teaching Assistant)
- Fall - April 1
- Winter - September 1
- Spring - November 1

Admission Requirements - PhD

Admission requirements for the PhD program include a M.S. degree in an engineering field, science, or closely related area. All applicants must contact a CEE faculty member prior to submitting an application seeking a PhD advisor. For admission, a student must have a CEE faculty member agree to be his/her PhD advisor. Applicants must also meet PSU graduate admission requirements. Please refer to Graduate Studies for these requirements. Application instructions for the PhD program are available at www.pdx.edu/cee.

Pass/No Pass Grading Policy - PhD

All courses taken in the Department of Civil and Environmental Engineering by degree

candidates must be taken for a letter grade, unless a course is only offered with a pass/no pass option. Courses outside the Department of Civil and Environmental Engineering may be taken pass/no pass only with the consent of the student's adviser. Non-degree seeking students may take Civil and Environmental Engineering courses pass/no pass with the consent of the instructor.

Degree Requirements - PhD

A PhD student must complete the following departmental requirements:

1. Complete a minimum of two years of full-time graduate work (including coursework and thesis credits) beyond the M.S. degree;
2. Complete an approved program of study, which includes a minimum of 24 hours coursework. Coursework may include up to 8 hours of CE 601, 604, 605, or 606.
3. Pass the comprehensive examination;
4. Present and pass a proposal defense for advancement to candidacy;
5. Complete 27 credit hours of dissertation credit (CE 603) leading to the completion of a doctoral dissertation;
6. Present and pass the final oral dissertation defense; and
7. Submit the written dissertation in compliance with University guidelines and deadlines.

All other degree requirements for the PhD program are established by PSU's Office of Graduate Studies. Please refer to Graduate Studies for the university's doctoral degree requirements.

About the Graduate Certificate in Transportation

The Graduate Certificate in Transportation is a 21 credit hour 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 M.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.

About the Graduate Certificate in Hydrology

The Graduate Certificate of Hydrology is

designed to give students advanced training in hydrology, and leads to professional certification with the American Institute of Hydrology (AIH). More information about the certificate can be found at www.pdx.edu/esm/hydrology-certificate.

About the Graduate Certificate in Sustainability

The Graduate Certificate in Sustainability offers an integrated series of post-baccalaure-

ate courses that allow students to deeply explore and understand the three spheres of sustainability: social, economic, and environmental. The courses cover theory as well as practice, providing experience analyzing real-world approaches and solutions. Courses can be taken by students admitted solely to the certificate program or concurrently enrolled in masters and doctoral programs at PSU. The certificate is administered by the Institute for Sustainable Solutions. More

information about the certificate and application procedures can be found at www.pdx.edu/sustainability/graduate-certificate-in-sustainability.

Computer Science

120 Fourth Avenue Building
503-725-4036
www.pdx.edu/computer-science/

B.S.—Computer Science
Minor in Computer Science
M.S.—Computer Science
Ph.D.—Computer Science
Graduate Certificate in Computer Security

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 community-based projects during the two-term capstone course in software engineering.

The computer science curriculum at Portland State University is accredited by the Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 - Telephone: (410) 347-7700. This national organization sets standards for computer science education defined in terms of curricular content, quality of faculty, and adequacy of facilities.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Computer Science's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

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

Students who are intending to graduate with an undergraduate degree in computer science must be admitted to Portland State University and file the Application 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 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 48 upper-division computer science credits (CS 300, 305, 311, 321, 322, 333, 350, 386, 487, 488 and 12 credits of upper-division computer science electives). Students also must be in admitted status during the term they intend to graduate.

Eligibility for Admission

To be eligible for initial undergraduate admission, each student should meet the following requirements:

1. Have completed each of the following core Computer Science courses: CS162, CS163, CS201, CS202, CS250, and CS251 with a grade of C or better.
2. Have an overall average grade point of 2.0 or better in all required CS courses, computed over all graded attempts to take these courses. For example, if a student receives a D in CS250, retakes it and receives a C, the student average grade point over these two attempts would be 1.5. However, a B in another required CS course, such as CS202, would raise the average grade point to 2.0 over these three graded attempts. X's and W's are not counted as graded attempts.
3. Have completed these required courses from outside the Computer Science Department with a grade of C- or better: Mth251; Mth252; an approved laboratory science sequence; Wrt227; Comm220; and Freshman Inquiry or Wrt121.
4. Have completed a minimum of 90 credits.

Students not meeting these requirements may petition the CS Appeals Committee for special admission.

Continuation Criteria

Admitted CS undergraduate students who are not making acceptable progress towards their degree requirements will be dropped from the program and required to reapply for admission. Acceptable progress is defined as completion of at least 8 credits of coursework with acceptable grades (C or better for required CS courses, C- or better for required non-CS courses), satisfying departmental requirements, over the preced-

ing 12 months. Readmission will be determined by the CS Appeals Committee.

Prerequisite policy

Before enrolling in any Computer Science course, students should read the course description and ensure that they have completed all prerequisites with a grade of C or better. Students who have not met this requirement may be administratively dropped from the course during the first week of classes.

Degree requirements

Requirements for major. Majors in computer science must complete the following University and departmental degree requirements.

1. 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.
2. All courses specifically required by the department must be taken for a letter grade unless a required course is only offered with a pass/no pass option.
3. After admission to the computer science program, students are required to complete a minimum of 40 upper-division computer science credits in residence at PSU.
4. Freshmen entering with 29 or fewer prior university/college credits must complete all University Studies requirements, including freshman and sophomore inquiry sequences and upper-division cluster courses.
5. Transfer students must have a minimum of 39 credits of University Studies courses and/or arts and letters/social science courses prior to graduation; 12 of these credits are upper-division cluster courses that must be taken at PSU. Transfer students should consult with the CS departmental adviser for more information.

The following is a sample curriculum.

Students choosing to make modifications to this schedule are urged to consult with an adviser.

Freshman year	Credits
CS 162 Introduction to Computer Science	4
CS 163 Data Structures	4
CS 202 Programming Systems	4
Mth 251, 252, 253 Calculus I, II, III	12
Freshman Inquiry	15
Electives	12
Total	51

Sophomore year	Credits
CS 201 Computer Systems Programming	4
CS 250 Discrete Structures I.....	4
CS 251 Discrete Structures II.....	4
Approved Laboratory Science	15
Sophomore Inquiry	12
Total	39

Junior year	Credits
-------------	---------

CS 300 Elements of Software Engineering	4
CS 305 Social, Ethical, and Legal Implications of Computing.....	2
CS 311 Computational Structures	4
CS 321, 322 Languages and Compiler Design	8
CS 333 Introduction to Operating Systems	4
CS 350 Algorithms and Complexity	4
Stat 451 Applied Statistics for Engineers and Scientists I	4
Wr 227 Technical Writing	4
Upper-division cluster	12
Total	46

Senior year	Credits
CS 469, 470 Software Engineering Capstone.....	6
CS 486 Introduction to Databases	4
ECE 341 Introduction to Computer Hardware	4
or equivalent.	
Approved upper-division computer science electives	12
Approved Math electives	7
Approved Science elective	4
Free electives.....	6
Total	43

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 300- and 400-level 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, 401, 405, 406, 407, and 409. Additionally, CS 404, University Studies courses, and courses specifically described as not being applicable to the CS degree may not be used.

Approved Laboratory Science. Students must select one of the following 15 credit sequences, including their associated laboratories: Ph 211, 212, 213 with 214, 215, 216 (General Physics w/Calculus and Lab); Ch 221, 222, 223 with Ch 227, 228, 229 (General Chemistry and Lab); or Bi 251, 252, 253 (Principles of Biology with integrated Lab).

Approved Science electives. Students must complete additional credits of Approved Science electives chosen from Biology, Chemistry, Physics, Geology, or Environmental Science. A total of at least 19 credits of Approved Laboratory Science and Approved Science electives must be taken.

Approved Mathematics electives. Students must complete 7 or more credits of approved mathematics electives. The current list of approved courses includes: Mth 261, Mth 311, Mth 343, Mth 344, Mth 346, Mth 356, Mth 457, Mth 458, Mth 461, Mth 462, Stat 366, Stat 452, Stat 464, Stat 467 and Stat 468. Other upper-division mathematics or statistics courses may be used to satisfy the requirement with prior written approval from the Computer Science Undergraduate Adviser.

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 162 Introduction to Computer Science	4
CS 163 Data Structures	4
CS 201 Computer Systems Programming	4
CS 202 Programming Systems	4
Computer science electives except CS 404. At least 12 of these credits must be upper division	20
Total	36

Only grades of C or better count toward

departmental requirements. At least 18 of the required 36 credits must be taken at Portland State University.

Honors track. The honors degree in computer science requires the writing of an honors thesis. Details about the program can be found at the computer science Web site <http://pdx.edu/computer-science/>.

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, this program combines courses from both schools to award a B.S. in computer science and Master of Biomedical Informatics at the end of five years. Details about the program can be found at the computer science Web site <http://pdx.edu/computer-science/>.

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, learning and adaptive systems, theory, and security. Flexibility is achieved by designing programs of study to meet individual needs.

The departmental Web site <http://pdx.edu/computer-science/> 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, transcripts, 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. Students with a bachelor's degree may apply directly 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 65. 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 of computation, programming languages, and operating systems, plus a 9-credit 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 68. 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 conference.

Graduate Certificate in security. The security certificate program requires admission as a graduate student, similar to admission to the Master's program, in the Computer Science department. The program requires 21 hours total of graduate classes. There are five core classes for a total of 15 hours. In addition two optional classes must be taken for the needed additional six credit hours. In summary, seven graduate classes must be taken, five are core, and two classes are optional.

Electrical and Computer Engineering

1900 SW Fourth Ave., Suite 160
503-725-3806
www.pdx.edu/ece/

B.S.—Computer Engineering
B.S.—Electrical Engineering
Minor in Electrical Engineering
M.S.—Electrical and Computer Engineering
M.Eng.—Electrical and Computer Engineering
Ph.D.—Electrical and Computer Engineering
Graduate Certificates

Mission, Vision & Values

Mission

We prepare students for successful careers and lifelong learning in engineering and research through knowledge creation, technology development, and innovation.

Vision

Our vision is to be a premier source of electrical and computer engineering talent and research in the Pacific Northwest. This means our graduates are successful, our research is innovative, and we are the intellectual center for our discipline in the Portland region.

Values

- We value the success of our graduates
- We value research, knowledge creation and innovation
- We value high intellectual and ethical standards

- We value quality education
- We value broad access to learning
- We value diverse paths to proficiency
- We value our contribution to the Oregon economy
- We value lifelong learning

Undergraduate programs

The Department of Electrical and Computer Engineering offers programs in electrical and computer engineering. Cooperative educational arrangements with Portland-area industries, government agencies, and engineering consulting offices are available to qualified students. Qualified freshmen are encouraged to participate in the University Honors Program described on page 53. Qualified upper-division students should consider the Electrical and Computer Engineering departmental honors track as described below.

The electrical engineering and computer engineering programs at Portland State University are accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 - Telephone: (410) 347-7700.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Electrical and Computer Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Program Educational Objectives

The electrical and computer engineering programs prepare our graduates for the following program educational objectives:

1. Graduates are expected to be employed as electrical or computer engineers or in related fields that benefit from an electrical and computer engineering education.
2. Graduates are expected to advance in their profession and engage in the professional community.
3. Graduates are expected to continue to learn and adapt in a world of constantly changing environment and technology.

Admission to the Electrical Engineering or Computer Engineering programs.

Students may declare Electrical Engineering (EE) or Computer Engineering (CMPE) as their major at any time after enrolling at Portland State University. However, students must be admitted formally to their chosen program by the Department of Electrical and Computer Engineering before they will (1) be allowed to enroll in restricted upper-division courses offered by the program, and (2) be graduated from the program. Application forms may be obtained from the Office of Student Services, Maseeh College of Engineering and Computer Science, Suite 100, Engineering Building or from the Electrical and Computer Engineering Department, Suite 160, Fourth Avenue 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 the EE and CMPE programs must:

- Meet all eligibility requirements.
- Apply for admission to PSU.
- Apply for program admission to the Department of Electrical and Computer Engineering.
- Have one copy of their transcripts sent to their engineering or computer science department.
- Have one copy of their transcripts sent to the the Department of Electrical and Computer Engineering.

Application deadlines for admission to the Electrical Engineering or Computer Engineering programs are:

- for fall term — April 15
- for winter term — August 15
- for spring term — February 1

Eligibility. To be eligible for admission, 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 program as follows:

Electrical Engineering: The engineering core consisting of Ch 221, 227; ECE 101, 102, 103, 171, 221, 222, 271; Mth 251, 252, 256, 261; Ph 221[†], 222[†], 223[†], 214, 215, 216; Freshman Inquiry[‡] (76 credits).

Computer Engineering: Ch 221, 227; CS 162; ECE 102, 171, 221, 222, 271; Mth 251, 252, 256, 261; Ph 221[†], 222[†], 223[†], 214, 215, 216; Freshman Inquiry[‡] (72 credits).

2. Have a minimum major GPA of 2.25 (Major GPA is calculated based on an average of all major-related classes taken prior to admission).

[†] Physics 211, 212, and 213 also accepted
[‡] Comm 100 or 220, and Wr 121 for transfer students

Selective Admission. If the number of eligible applicants for admission to the Electrical Engineering or Computer Engineering 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 the Electrical Engineering or Computer Engineering undergraduate program, students will be expected to make satisfactory progress toward their declared degree and will be subject to the following rules:

1. The cumulative major GPA 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 per term 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 cumulative major 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 will also be suspended if not enrolled in Electrical and Computer Engineering 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. Students who have twice been found in violation of the student code of conduct will be automatically suspended from the program or denied admission. Transfer students will normally be expected to provide a disciplinary record from their institution. Any incidences of academic dishonesty are grounds for denial of admission. Full details of this policy are available from the department.

Appeals. Students denied admission or suspended may request reconsideration by submitting a petition. The petition and supporting materials will be reviewed by the Electrical and Computer Engineering department chair 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 the Electrical Engineering and Computer Engineering programs must be taken for a letter grade unless a required course is only

offered with a pass/no pass option.

Degree requirements for Electrical Engineering 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, Comm 100, and 32 credits as a combination of University Studies courses and liberal arts/social science transfer credits. (At a minimum the 12 credit upper-division cluster must be taken at PSU. Please contact ECE departmental adviser for details of this requirement.)
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 engineering and computer engineering students must have an overall GPA, which includes all courses taken at PSU, greater than 2.00. Their major GPA must be greater than 2.00. All major grades must be greater than C-. 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 the Continuation Criteria section above.

Requirements for major in electrical engineering. The Electrical Engineering program is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 – telephone: (410) 347-7700. It is designed to provide a comprehensive background in the electrical sciences and offers an opportunity for specialization in the areas of analog/RF circuits, electromagnetics, energy systems, microelectronics, power engineering, signal processing and digital/VLSI design. Students are expected to declare their specialization track by the Spring term of their junior year. 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
ECE 101 Exploring Electrical Engineering.....	4
ECE 102 Engineering Computation	4
ECE 103 Engineering Programming.....	4
Mth 251, 252 Calculus I, II	8
Mth 261 Introduction to Linear Algebra.....	4
Ch 221 General Chemistry.....	4
Ch 227 General Chemistry Laboratory.....	1
Freshman Inquiry	15
Total	48

Sophomore year	Credits
ECE 221 Electric Circuits Analysis I	4
ECE 222 Electric Circuits Analysis II	4
ECE 223 Electric Circuits Analysis III	4
ECE 271 Digital Systems.....	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	48

Junior year	Credits
ECE 311 Feedback and Control.....	4
ECE 321, 322, 323 Electronics I, II, III	12*
ECE 331 Engineering Electromagnetics I	4
ECE 332 Engineering Electromagnetics II.....	4*
ECE 371 Microprocessors	4
ECE 312 Fourier Analysis.....	4
Stat 451 Applied Statistics for Engineers and Scientists I	4
Wr 227 or Wr 327 Technical Writing	4
Upper division Math/Science elective	4
Track specific junior electrical engineering electives.....	4
Track specific junior electives are listed in departmental guides and departmental website.	
* Students in Energy Systems track take ECE 325 instead of ECE 323 and ECE 372 instead of ECE 332.	
Total	48

Senior year	Credits
ECE 411, 412, 413.....	10
Track specific senior electrical engineering electives	16
Upper-division cluster	12
† Ec 314 Private and Public Investment.....	4
Total	38

Track specific senior electrical engineering electives. The student is required to complete at least 16 senior elective credits, as determined by their chosen track. A list of tracks and their corresponding electives is published in departmental guides and departmental website and it currently includes Analog/RF Circuits, Electromagnetics, Energy Systems, Microelectronics, Power Engineering, Signal Processing, and digital/VLSI tracks. The following omnibus numbered courses are excluded: ECE 401, 405, 407. ECE 403 Honors thesis may be used by students in the electrical engineering honors track.

† Ec 314 is a required course that can be taken as a part of some upper-division clusters.

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: ECE 101, 102, 103, 171, 221, 222, 223, 271 or approved equivalents. At least four lecture courses from this list 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 accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 – telephone: (410) 347-7700. It 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. Two specialized tracks are offered: Computer Hardware and Embedded Systems. 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.

Freshman year	Credits
ECE 171 Digital Circuits	4
ECE 102 Engineering Computation	4
CS 162 Introduction to Computer Science II or equivalent.....	4
Ch 221 General Chemistry	4
Ch 227 General Chemistry Laboratory.....	1
Mth 251, 252 Calculus I, II	8
Freshman Inquiry	15
Total	40

Sophomore year	Credits
ECE 221 Electric Circuits Analysis I	4
ECE 222 Electric Circuits Analysis II	4
ECE 271 Digital Systems	4
CS 163 Data Structures	4
Mth 256 Applied Differential Equations I	4
Mth 261 Introduction to Linear Algebra	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
ECE 321 Electronics I	4
ECE 351 Hardware Design Languages and Prototyping.....	4
ECE 371 Microprocessors	4
ECE 372 Microprocessor Interfacing and Embedded Systems.....	5
ECE 373 Embedded Operating Systems and Device Drivers	5
CS 201 Computer Systems Programming	4
CS 333 Operating Systems and Concurrent Programming or equivalent	4
Mth 356 Discrete Math.....	4
Stat 451 Applied Statistics for Engineers and Scientists I	4
Wr 227 or Wr 327 Technical Writing	4
Upper-division Math/science elective	4
Total	46

Senior year	Credits
ECE 411, 412, 413.....	10
ECE 485 Microprocessor System Design	4
ECE 486 Computer Architecture	4
Track specific senior electrical engineering electives	16
† Ec 314 Private and Public Investment.....	4
Upper-division cluster	8
Total	46

Track specific senior computer engineering electives. The student is required to complete at least 16 senior computer engineering elective credits, as determined by their chosen track. A list of tracks and their corresponding electives is published in departmental guides and on departmental website and it currently includes Computer Hardware and Embedded Systems. The following omnibus numbered courses are excluded: ECE 401, 405, 407. ECE 403 Honors Thesis may be used by the students in computer engineering honors track.

† Ec 314 is a required course that can be taken as a part of some upper-division clusters.

Honors track. The Electrical Engineering and Computer Engineering departmental honors tracks 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 programs. Students who meet honors track requirements will receive special recognition on their diploma.

Admission Criteria

1. Admission to the Electrical or Computer Engineering Program and completion of minimum 90 credit hours of degree required courses.
2. Minimum overall and major GPA of 3.40.
3. At least three quarters of EE or CMPE degree program study left.

Application Procedure

Typically, students should apply for admission during the spring quarter of the junior year, but applications will be considered year-round. Students should submit the fol-

lowing:

1. ECE Honors Program application form.
2. Official transcripts of all university work.
3. Letters of reference from at least two ECE faculty members.
4. Statement of interest indicating reasons for seeking admission to the honors program.

After admission, student will work with the ECE department to identify the faculty advisor and develop an honors project plan.

Additional graduation requirements:

1. Completion of 6 credits of ECE 403 Honors Thesis with a minimum grade of B+ (Note: 4 credits can replace one senior elective.)
2. Approved final written thesis and public presentation.
3. Overall and major GPA greater than 3.4. More details are available from the ECE department.

Fast Track BS+MS Program

Since the amount of knowledge required for state-of-the-art design is much greater than can be gained in a four-year BS program, a Master's degree is now considered the "career" degree in the Electrical and Computer Engineering field. An ECE graduate who enters the field with a BS degree is expected to obtain a Master's degree as part of his/her long term career advancement. Graduates who enter the profession with Master's degrees start with considerably higher salaries and are eligible for more advanced positions.

The usual time required to directly obtain a BS in Electrical Engineering or a BS in Computer Engineering and an MS in Electrical and Computer Engineering is 4 years for the BS and an additional 5 quarters for the MS. This total of more than five and a half years is financially difficult and excessively delays entry into the industry. The Fast Track BS+MS program significantly shortens this path for top students by allowing up to 15 credits of ECE graduate credits to be used for both the BSEE degree or the BSCMPE degree and the MSECE degree.

Admission criteria

Students will apply for this program using an online application form that is a slightly modified version of the standard graduate application form. Since many ECE students are making their way through their programs on a part time basis and are therefore ready to enter the program at different times, students may apply to enter the program during any quarter. A GRE score is not required. The admission criteria for the program are as follows:

- Admitted to the ECE Department for BSEE or BSCMPE

- 3.3 cumulative GPA
- 3.3 upper division major GPA with at least 16 credits of upper division ECE classes
- One ECE faculty recommendation

Admission process and program flow

Applications for this program will be processed by the Graduate Program Director just as regular graduate applications are. When a student is accepted, he/she will be assigned an ECE Faculty Advisor who is an expert in the MS coursework track choice stated in the application. Since the M.S. tracks closely parallel the coursework tracks in the BS programs, the MS track chosen will usually be just an extension of the track the applicant is pursuing in his/her undergraduate program. In most cases, the 400 level senior classes specified in an undergraduate track have both 400 and 500 levels available and the 500 level versions of these courses are included in either the Core list or the Depth and Breadth list for the related graduate level track. With Advisor approval, students in the Fast Track BS + MS program will take the 500 level versions of these classes and use up to 15 credits of these to satisfy both BS requirements and MS requirements. Note that 3 credits from a 4 credit class can be used to bring the shared total up to 15 credits but all shared classes must have grades of B or higher.

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* at www.pdx.edu/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 will be considered for admission to the Department of Electrical and Computer Engineering as regular graduate students. Applicants with a B.S. in either electrical or computer engineering with a grade point average in their upper division technical coursework below 3.00 but higher than 2.75 may be granted conditional admission status. Applicants with a B.S. degree in a related field (e.g., mathematics, physics, computer science, or mechanical

engineering) will be required to take an individually specified group of undergraduate ECE classes as a Post-Bac student to gain the basic skills needed to succeed in an ECE Master's program. Upon successful completion of these undergraduate ECE "bridge" classes with grades of B or better, an applicant will be considered for admission to the Department of Electrical and Computer Engineering as a regular graduate student.

Master of Science in electrical and computer engineering. The admission requirements are identical to those of the ECE Department's M.Eng. program as state above. Additionally, M.S. applicants with a non-ABET accredited electrical or computer engineering B.S. degree must submit official GRE scores. GRE scores must be no older than five 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 normally 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 five 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 as stated above.

Degree requirements

Master of Engineering in electrical and computer engineering. Please refer to the ECE Graduate Handbook for detailed degree requirements and deadlines. In addition to the University master's degree requirements, a candidate for the Master of Engineering degree must complete at least 45 adviser approved graduate-level credits.

Master of Science in electrical and computer engineering. Please refer to the ECE Graduate Handbook for detailed degree requirements. In addition to the University master's degree requirements, a candidate for the M.S. degree in electrical and computer engineering must complete at least 45 adviser approved graduate-level credits.

Doctor of Philosophy in electrical and computer engineering. Please refer to the ECE Graduate Handbook for detailed degree requirements and deadlines. In addition to the University doctoral degree requirements, 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. In addition to these 45 ECE graduate credits, a student must complete an additional 8 credits of graduate lecture courses, as specified by the student's Ph.D. Advisory Committee. The University requires a minimum of 81 credits beyond

the bachelor's degree for a Ph.D., so a student must take one additional graduate credit to satisfy the University's total credit requirement. 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.

The Dissertation Committee may require more than one such publication.

Graduate Certificate in electrical and computer engineering. Please refer to the ECE Graduate Certificate Handbook for detailed degree requirements and deadlines. In addition to the University graduate certificate requirements, a student must meet the pro-

gram 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.

Engineering and Technology Management

LL Suite 50-02, Fourth Avenue Building

503-725-4660

www.etm.pdx.edu/

M.S.—Engineering and Technology Management

M. Eng.—Technology Management

M.Eng.—Project Management

M.Eng.—Manufacturing Engineering Management

Ph.D.—Technology Management

Ph.D.—Participating department in Systems Science Doctoral Program Graduate Certificates

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 and technology management, Master of Engineering in manufacturing engineering in technology management, and Master of Engineering in project management.

In addition to meeting general University admission requirements listed on page 58, 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.

Graduate Certificate in New Product Development, Strategic Management of Technology, Technology Management, and Technological Entrepreneurship.

Admission requirements for the ETM certificates are identical to the ETM Department's MS program.

Degree requirements

Master of Science in engineering and technology management. A minimum of 52 credits in approved graduate courses is required to complete the Master of Science degree in engineering and technology 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 elec-

tives.

Core courses	Credits
ETM 520 Management of Engineering and Technology	4
ETM 522 Communication and Team Building	4
ETM 530 Decision Making	4
ETM 535 Advanced Engineering Economics	4
ETM 540 Operations Research in Engineering and Technology Management	4
ETM 545 Project Management in Engineering.....	4
ETM 555 Technology Marketing	4

Capstone requirement

(one of the following; 4 or 8 credits):

ETM 503 M.S. Thesis.....	8
ETM 506 Capstone Project.....	4
ETM 590 Engineering and Technology 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 technology management, project management, and manufacturing engineering management.

The Master of Engineering programs are currently approved for the ETM department, but we are not accepting applications at this time.

Doctor of Philosophy in Technology Management.

Admission requirements include Bachelors or higher degree in engineering, sciences, management with technology emphasis, or related disciplines; minimum 3.0 undergraduate GPA or 3.50 GPA in at least 12 graduate credits; GRE scores obtained within two years of application to the program; a detailed statement of research interests acceptable to the ETM faculty; minimum 575 TOEFL score for international applicants; and three letters of recommendation. In addition to the University's general degree requirements, the Ph.D. program in Technology Management consists of the following nine steps: (Step-1): Admission to the program; (Step-2): Successful completion of the equivalent of at

least 60 credits of coursework beyond the Bachelors degree distributed as follows: CORE: at least 20 credits from the following courses with at least one course from each group. All courses are four credits each. Additional courses taken from this group beyond the minimum required 20 credit hours can be counted toward the fulfillment of the specialization course requirements described below. **Group-1:** Management of Engineering and Technology, Management of Technology Innovation; **Group-2:** Project Management, Technology Marketing; **Group-3:** Strategic Management of Technology, Competitive Strategies in Technology Management; **Group-4:** Technology Assessment and Acquisition, Technology Transfer. SPECIALIZATION: at least 20 credits from courses supporting the proposed research area, including Communications and Teambuilding, Strategic Planning, Manufacturing Systems Engineering, Manufacturing Systems Management, Total Quality Management, Technology Forecasting, Managing Intellectual Capital, Ethical Issues in Technology Management, Technology Entrepreneurship, Project Management Framework, Project Management Tools, R&D Management, New Product Development, Managing New Technology Introduction, Human Side of Technology Management, MGMT 544: Technology Management, MKTG 511: Pioneering Innovation, MKTG 548: Product Management and Innovation, MIM 524: Global Sourcing and Supply, ISQA 551: Managing Information Technology, ISQA 552: Managing Operations and the Value Chain, PSY 578: Leadership and Group Effectiveness, PSY 615: Advanced Industrial/Organizational Psychology, PA 545: Organization Development, PA 555: Program Evaluation and Management, USP 578/678: Impact Assessment, PA 598: Value-based Management, SOC 557: Complex Organizations, CS 686: Introduction to Database Management, EC 511: Cultural Economics, EC 531: Urban Economics, EC 532: Environmental Economics. METHODOLOGY: at least 20 credits from the following courses: Decision

Making, Advanced Engineering Economics, Benchmarking Using Data Envelopment Analysis, Operations Research, Manufacturing Systems Simulation, Research Methods for Engineering and Technology Management, Technology Forecasting, Decision Support Systems: Data Warehousing, Project Management Tools, Probability/Statistics for Technology Management, Strategic Intelligence, ISQA 572: Models for Quality Control, PSY 621: Univariate Quantitative Methods, PSY 622: Multiple Regression & Multivariate Quant Methods, PSY 623: Factor Analysis & Covariance Structure Modeling, PSY 593: Decision Making Laboratory, MTH 667, 668, 669: Stochastic Processes and Probability Theory-I, II, III, MTH 692: Research Methodology and Design, STAT 451, 452: Applied Statistics for Engineers and Scientists-I, II, STAT 564: Applied Regression Analysis, SYSC 514: System Dynamics, SYSC 625: Agent Based Simulation, SYSC 627: Discrete System Simulation, SYSC 629: Business Process Modeling and Simulation, USP 655: Structural Equation Modeling, USP 656: Multilevel Regression, SOC 597: Applied Survey Research, EC 585: Cost-Benefit Analysis, EC 586: Project Evaluation, EC 570: Econometrics. The students may also choose additional courses in other academic units throughout the university, approved by their adviser, if such courses are supportive of their proposed research areas. (Step-3): 12 credits of independent study supervised by ETM faculty culminating in the preparation of a research paper evaluated by the ETM faculty as being at the level of acceptable papers for a national or international conference on Engineering and Technology Management. (Step-4): Successful completion of a comprehensive examination to demonstrate mastery of the Engineering and Technology Management field, including the defense of the research paper described in step 3 above. (Step-5): Selection of the dissertation adviser from the ETM faculty and formation of the Ph.D. committee including one member appointed by the Dean of Graduate Studies. (Step-6): Development of the dissertation proposal

and its approval by the Ph.D. committee resulting in the advancement to Ph.D. candidacy. (Step-7): Registering for at least 27 dissertation credits while conducting research after the advancement to candidacy. (Step-8): Preparation of at least one publishable paper for a research journal or a recognized refereed technical conference proceedings based upon the dissertation research. (Step-9): Defense of the dissertation. Specialization areas of research related to emerging technologies, decision analysis, data envelopment analysis, technology evaluation, technology forecasting, technology roadmapping, technology transfer, technology diffusion, knowledge management, new product development, multicriteria decision making, quantitative benchmarking, productivity management, project management, manufacturing management, technology marketing, resource optimization, strategic management of technology, and human side of technology management are available.

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 68.

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.

Mechanical and Materials Engineering

Suite 400, Engineering Building
503-725-4290
www.pdx.edu/mme/

B.S.—Mechanical Engineering
M.S.—Mechanical Engineering
M.Eng.—Mechanical Engineering
M.S.—Materials Science and Engineering
Ph.D.—Mechanical Engineering

Mechanical engineering provides 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.

Undergraduate program

The BSME curriculum at Portland State University is distinguished by its emphasis on the design process culminating in the Capstone project in the Senior year. The curriculum allows specialization in fluid systems, mechanical systems, thermal systems, and machine design.

The mechanical engineering curriculum is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 - telephone: (410) 347-7700. 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 makes them highly desirable to employers.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Mechanical and Materials Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

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

Policy on Admission to the BSME Program

Students may declare Mechanical Engineering as their major at any time after enrolling at Portland State University. However, students must be admitted formally to 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 web site of the Mechanical and Materials Engineering Department, www.pdx.edu/mme. PSU students may apply during the term in which they anticipate completing all eligibility requirements.

Students transferring from other institutions who want to be admitted must:

- Meet all eligibility requirements.
- Apply for admission to PSU.
- Apply for program admission to the Mechanical and Materials Engineering department.
- Have one copy of their transcripts sent to the Mechanical and Materials Engineering office.
- Have one copy of their transcripts sent to the Office of Admissions.

Application deadlines for admission to a degree program are:

- Fall term - April 15
- Spring term - December 15

Note: Dates given are those preceding the start term of intended admission. Due to the flow of course sequences and prerequisite requirements, admittance to the BSME program is recommended for the Fall term only. Admission during the Spring term is considered on a case-by-case basis.

Eligibility

To be eligible for admission to the Mechanical Engineering program a student

must meet the following minimum requirements:

1. Complete the following courses with a minimum grade of C and a minimum GPA of 2.5:
Ch 221, 227; ME 120, 121, 122, EAS 211, 212, 215; ECE 241/241L; Mth 251, 252, 254, 256, 261; Ph 221[†], 222[‡], 223[‡], 214, 215, 216; Freshman Inquiry[‡] (69 credits).
2. Have a minimum GPA of 2.33 in all engineering and computer science coursework
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.

[†]Physics 211, 212, and 213 also accepted.

[‡]Comm 100 or 220 and Wr 121 for transfer students.

Selective Admission

If the number of eligible applicants for admission to the Mechanical Engineering program exceeds that for which resources are available, acceptance will be competitive.

The selective admission process uses the following criteria:

1. The number of students admitted to the BSME program will be set with the goal of maintaining the highest quality of the student learning experience.
2. All applications for admission for a given term are evaluated as a single group (no rolling admission).
3. Applicants are ranked according to a composite GPA in the following courses: Math 251, Math 252, Math 256, Ph 211, EAS 211, EAS 212. GPAs are computed without using replacement policy for grades of D or below. All attempts at taking a course are included in the computation.
4. Priority, within reasonable limits, will be given to students from PSU.
5. The final admission decision is made by a committee of MME faculty and staff.

Continuation Criteria

After admission to the Mechanical Engineering program students will be expected to make satisfactory progress toward their declared degree and will be sub-

ject 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 the BSME program. Students also will be suspended if not enrolled in engineering and/or computer science courses for three consecutive terms.
5. Students who are suspended must wait at least one term before reapplying, and must meet with an advisor to determine whether and under which conditions readmission is feasible.

Appeals

Students denied admission or suspended may request reconsideration by submitting a petition. The petition and supporting materials will be reviewed by the Chair of the Mechanical and Materials Engineering Department 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 the department must be taken for a letter grade unless a required course is only offered with a pass/no pass option.

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
ME 120 Introduction to Engineering	3
ME 121 Introduction to Systems and Control.....	3
ME 122 Introduction to Design.....	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

Sophomore year	Credits
EAS 211 Statics	4
EAS 212 Strength of Materials	4
ME 213 Properties of Materials	4
EAS 215 Dynamics	4
ME 241 Manufacturing Processes	4
ECE 241L Electrical Engineering Laboratory	1
ECE 241 Introduction to Electrical Engineering.....	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	46

Junior year	Credit
EAS 361 Fluid Mechanics	4
ME 313 Analysis of Mechanical Components.....	4
ME 314 Analysis and Design of Machine Elements4	4
ME 321 Engineering Thermodynamics	4
ME 322 Applied Fluid Mechanics and Thermodynamics	4
ME 323 Heat Transfer	4
ME 350 Programming and Numerical Methods.....	4
ME 351 Vibrations and System Dynamics.....	4
ME 370 The Mechanical Engineering Profession...2	2
Stat 451 (CM) Applied Statistics for Engineers and Scientists I	4
Wr 327 Technical Report Writing.....	4
EC 314U Private and Public Investment.....	4
Upper-division cluster	4
Total	51

Senior year	Credits
ME 411 Engineering Measurement and Instrumentation Systems	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	36

Approved mechanical engineering electives.
The total may include any regular upper-division mechanical engineering course, except that no more than 4 credits be taken from ME 399, 401, 404, 405, and 406. MECOP students are allowed 2 credits of ME 407.

Honors Track

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 track
- Each student participating in the Mechanical Engineering honors track 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 engi-

neering elective.

Bachelor's Plus Master's Pathway

Many students recognize the importance of continuing education beyond the Bachelor's degree. The Bachelor's Plus Master's Pathway shortens the time to complete both the Bachelor's and Master's degrees, and it is more cost effective because graduate credits earned while still in the undergraduate program are charged at the undergraduate credit rate. The Pathway allows students enrolled in the PSU BSME program to apply up to 15 credits of their senior elective classes to both the BSME degree and any of the Master's programs offered by the MME department. To use the Pathway, students must maintain an undergraduate GPA of 3.3 and apply to the program before they graduate with their BSME.

Admission criteria

Students must apply to the Bachelor's Plus Master's Pathway while they are still enrolled in the BSME program using the form available on the MME web site. A GRE score is not required. The admission criteria for the program are as follows

- Currently enrolled in the BSME program
- Completed at least 12 credits of upper division ME classes
- Cumulative PSU GPA of at least 3.3
- Written recommendations by three of the MME faculty

Admission process and program flow

Applications for the Bachelor's Plus Master's Pathway are processed by the Graduate Program Director. Applications must be received before the student graduates with a BSME, but may be received as late as the last quarter before graduation with the BSME. After being accepted into the Bachelor's Plus Master's Pathway, the student selects graduate level courses (500 or 600 level) that will be applied to the student's BSME degree requirements. In the last term of enrollment in the BSME program, the student submits an abbreviated application form to indicate the intended Master's degree program. If the student admitted to the Pathway graduates with a GPA of 3.3 or better, no additional application to the graduate program is necessary. The student then completes the requirements for the BSME and graduates. When the student admitted to the Bachelor's Plus Master's Pathway matriculates into the graduate program, up

to 15 credits of graduate level course work completed while an undergraduate will then be applied to the student's graduate program.

Students admitted to the Pathway who do not maintain a PSU GPA of 3.3 at graduation are not allowed the benefit of applying graduate credits to both their BSME senior elective requirements and to their graduate degree programs. A student in that situation can still reserve up to 15 graduate credits taken as an undergraduate for use in their graduate program. However, they must use the process specified by the graduate school to request that those courses be reserved. They must also not use those courses to meet degree requirements for the BSME.

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.

The department supports research in microfluidics, fluid flow in microgravity, energy conservation in the built environment, 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 Engineering in mechanical engineering. The Master of Engineering in Mechanical Engineering degree is a professional degree for students seeking to advance their skills of engineering applications. The program involves coursework only.

Master of Science in materials science and engineering. The Master of Science in materials science and engineering degree provides 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, electroslag welding technology, acoustic emission methods, modeling of molding and casting, chemical-mechanical planarization, and heat treatment.

Doctor of Philosophy in mechanical engineering. The Ph.D. program in

Mechanical Engineering aims to educate technical experts and researchers to fill leadership roles in industry, research and education. The program culminates in a written dissertation representing an original contribution to knowledge in the field. Research areas for the degree include, but are not limited to, Bioengineering, Building Science and Energy Systems, Controls and Dynamics, Fluid Mechanics, Heat Transfer, Materials Science, and Mechanical Design. Candidates for the Ph.D. must meet the University requirements for the degree in addition to the requirements listed below.

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 65, 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 Master of Science in Mechanical Engineering.

Master of Science in materials science and engineering. For regular admission consideration, applicants should meet University graduate admission requirements found on page 65 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.

Doctor of Philosophy in mechanical engineering. A student applying to the Ph.D. program in mechanical engineering will normally be required to have completed an M.S. degree in mechanical engineering or a closely related field. Applicants will need to provide three letters of recommendation, a statement of purpose, a resume or curriculum vitae and scores on the GRE exam taken no more than 5 years before the date of application. Additional admission requirements and details are published on the MME department web site at www.pdx.edu/mmel.

Degree requirements

Master of Science in mechanical engineering. University master's degree requirements are listed on page 65. In addition, a candidate for the M.S. degree must complete at least 27 credits in engineering, excluding thesis or project.

Required core courses are ME 551 and one approved graduate math course. 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 master's degree may be completed with one of two options. The thesis option requires 36 credits of course work and 9 credits of thesis (ME 503). The project option requires 36-39 credits of coursework and 6-9 credits of research project (ME 501). Student research is conducted under the supervision of faculty, and a final oral examination covering the thesis or project must be successfully completed. Coursework can include up to 17 credits in total from 501, 503, 504, 505, and 506, with a maximum of 9 credits of ME 501 or a maximum of 9 credits of ME 503. Students must choose either ME 501 and ME 503.

Students must complete ME 551, up to two credits of ME 507, and at least one approved, graduate-level mathematics course. By the beginning of their third term, all students must submit a study plan that is approved by their advisor. Updates to the study plan may be requested by the student's advisor, or the graduate committee.

Master of Engineering in mechanical engineering. In addition to the University master's degree requirements are listed on page 65, a candidate for the M.Eng. degree must complete 45 graduate credits, including ME 551 and an approved graduate level course in mathematics or statistics. One credit of ME 507 may be included in the 45 credit total. Up to 6 credits of approved industrial experience can be applied toward the degree. No research project is required, but students can include up to 8 credits in total from 501, 503, 504, 505, and 506 in the 45 credits required for completion of the degree.

Master of Science in materials science and engineering. In addition to meeting all University requirements for the M.S. degree found on page 65, 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 is 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 faculty 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 of Philosophy in mechanical engineering. In addition to the University doctoral degree requirements, the program requirements include a minimum of 27 credit hours of coursework, a comprehensive examination, prospectus defense, 27 hours of dissertation credit and final dissertation defense. The 27 credits of coursework must consist of at least 16 credits of 600-level courses, which can include up to 3 credits of ME 607 seminar. For further information on admission and degree requirements, current course schedule, and research opportunities, students should refer to the departmental web site www.pdx.edu/mmel.

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 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 211 or 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 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 252, Mth 261.

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 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 111

Introduction to Civil and Environmental Engineering (3)
Introduction to Civil and Environmental Engineering (CEE) through interaction with practicing professionals, upper class mentors, and professors in CEE. This course will consider the history, ethical concepts, sustainability issues, and communication in CEE. Lectures and laboratory.

CE 112

Civil and Environmental Engineering Computations (3)
Computational techniques in Civil and Environmental Engineering. Development of mathematical techniques to solve engineering problems. Use of statistical and graphical techniques to present engineering data. Introduction to data visualization and computer programming techniques in engineering. Lectures and laboratory.

CE 115

Civil Engineering Drawing and Spatial Analysis (3)
The graphic language applied to civil engineering. Projection systems. Multiview and pictorial representation. Introduction to computer assisted drawing software, geographic information systems and spatial analysis. Lecture and laboratory.

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 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 statically 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 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 345

Environmental Soil Mechanics (2)
Introduction to the description, classification, and significant engineering properties of soils for environmental majors. Emphasis on index properties, permeability, and flow nets. Prerequisites: EAS 212.

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. Prerequisites: Stat 451 and junior standing in engineering.

CE 361

Fluid Mechanics (4)
Properties of fluid; fluid statics; fluid dynamics; control volume and Reynolds transport theorem; conservation of mass, momentum and energy; differential analysis; rotational and irrotational flows, non-viscous and viscous flows, Navier Stokes equations. 3 units Lecture and 1 unit laboratory. Prerequisites: EAS 215 and Mth 256.

CE 362

Engineering Hydraulics (4)

Application of the principles of fluid mechanics to flow in closed conduits, turbomachinery and open channels. Topics include flow resistance, laminar and turbulent flow and introduction to boundary layer theory; flow in pressurized closed conduits including pipes in series and parallel; turbomachinery including pump systems and turbines; uniform and non-uniform flow in open channels, gradually and rapidly varied flow; dimensional analysis and similitude. 3 units lecture and 1 unit laboratory. Prerequisites: CE 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. Prerequisites: CE 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 414/514**Transportation Seminar (1)**

This weekly seminar features a different speaker each week covering various topics in transportation research and practice. The topics cover all modes of transportation, with a focus on current practice. Course is cross-listed course with USP. This course may be taken for credit up to three times.

CE 419/519*Bridge Engineering (4)**

Introduction to analysis and design of short to medium span highway bridges, including load descriptions, analysis and design procedures outlined in AASHTO Load Resistance Factor Design specifications. Prerequisites: CE 325.

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 non-prismatic 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 432/532, 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. Prerequisites: CE 321, CE 325.

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 432/532.

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 435/535**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 (3)**

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. Prerequisite: CE 432/532.

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 highway 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 462/562

Traffic Engineering Applications and Signal Timing (4)

Provides an understanding of both the theory and practice of traffic signal timing. Focuses on terms associated with signal timing, relating practice in the field with analysis completed using the Highway Capacity Manual and other traffic engineering software.

CE 463/563

Transportation and Logistics Optimization and Modeling (4)

Introduction to mathematical modeling techniques including linear programming, integer programming, basic network models (network flows and shortest paths), and their application to transportation and logistics problems. Focus on civil engineering systems and applications on transportation and logistics problems. Prerequisites: CEE senior standing.

***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 468/568**

Soil and Groundwater Restoration (4)

Methods for restoring contaminated soil and groundwater; Factors and processes influencing the efficacy of remediation systems. Emphasis on the scientific principles upon which soil and groundwater remediation is based. Containment, pump and treat, cosolvents and surfactants, soil venting, in-situ physical and chemical treatment. Prerequisites: senior/grad standing.

***CE 469/569**

Subsurface Hydrology (4)

Basic principles of aqueous flow in the subsurface, emphasizing the importance of groundwater as a resource. Hydrologic cycle, history of groundwater usage, aquifer classification and properties, Darcy's experiments and Law, hydraulic head and potential, porosity and permeability, transmissivity and storativity, heterogeneity and anisotropy, saturated vs. unsaturated subsurface flow, and hydraulics of pumping wells (drawdown, flow in confined and unconfined aquifers, steady-state vs. transient flow, slug tests, and aquifer-test design). Prerequisite: senior/graduate standing.

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; multiphase 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 480/580

Chemistry of Environmental Toxins (4)

The fate and transport-related behavior of toxic compounds in the environment. Classification, nomenclature, examples of anthropogenic compounds, and case studies. Introducing the physical and chemical processes associated with air-water exchange, organic-liquid exchange, sorption processes, chemical transformations, and bioaccumu-

lation. Prerequisite: Ch 221; Ch 222 Recommended.

***CE 481/581**

The Columbia River as a System (2)

Explores the climate and hydrologic processes that shape the Columbia River basin ecosystem, and relates these processes to the basin's management context. The geographic scope includes the watershed, the main stem and its reservoirs, major tributaries, the tidal river below Bonneville Dam, the estuary, the Columbia plume, and coastal waters that interact with the plume. Lectures and outside speakers will present or discuss vital issues in contemporary Columbia Basin management, along with relevant background information. Expected preparation: CE 361 and CE 371. Prerequisites: junior standing.

***CE 482/582**

Introduction to Sediment Transport (4)

Fundamentals of sediment transport in natural surface waters. Analysis of the governing equations of mass, momentum, and sediment conservation. Covers bedload and suspended material transport in riverine and estuarine waters, focusing on non-cohesive materials. Cohesive material transport will be briefly introduced. Prerequisites: CE 361, CE 371.

***CE 483/583**

Estuarine Circulation (4)

Introduction to the physical processes that govern estuarine and buoyant plume circulation. These include tides, density-driven circulation, internal tidal asymmetry and frontal propagation. Expected preparation: CE 576. Prerequisites: CE 361 and CE 371.

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. Prerequisites: senior standing in Civil or Environmental Engineering.

CE 486/586

Environmental Chemistry (4)

Survey of chemical aspects of major environmental issues: stratospheric ozone holes and chlorofluorocarbons; air pollution; global climate change; fossil fuel energy/"carbon footprint"; renewable energy; nuclear energy/radioactivity; toxic chemicals (pesticides, PCBs); endocrine disruptors; surfactants, chemical dispersants/oil spills; biodegradability of chemicals; chemistry of natural waters/acid rain; toxic heavy metals. Prerequisites: Ch 334 or 331. This is the same course as Ch 486 and can be taken only once for credit.

CE 487/587

Aquatic Chemistry (4)

Aqueous chemistry in natural water systems: simple-to-complex acid/base chemistry; titration curves; buffer strength; acid/base chemistry of carbon dioxide in open and closed systems; alkalinity as system variable (blood); mineral dissolution/precipitation (metal carbonates); redox chemistry: pe-pH, redox succession/organic loading/dissolved oxygen loss, nitrate reduction, iron oxide dissolution, hydrogen sulfide production, methane formation. Prerequisites: Ch 223 with a C- or better. This is the

same course as Ch 487 and can be taken only once for credit.

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 518/618**

Prestressed Concrete Design (4)

Analysis and design of components of prestressed concrete structures with reference to current codes. Prerequisites: CE 435/535.

***CE 522/622**

Plastic Analysis of Structures (4)

Techniques in the analysis of structures beyond the elastic limit. Methods of limit analysis and design. Prerequisites: CE 432/532.

***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 534/634**

Advanced Reinforced Concrete Design (3)

Design of spandrel beams, slabs on beams, shear walls, deep beams, corbels, and other components of reinforced concrete structures with reference to current codes. Prerequisites: CE 435.

***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 432/532.

***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 Soil Structure Interaction (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; see page 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 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 469/569.

***CE 571/671**

Subsurface Contaminant Transport (4)

Principles associated with the transport and fate of contaminants in subsurface systems. Complex, heterogeneous factors and processes (both physical and geochemical) influencing contaminant transport. Emphasis on the impact of these processes on contaminant fate across the multitude of scales in the subsurface. Case studies linking theory and measured/observed transport behavior. Prerequisites: graduate standing.

***CE 572/672**

Environmental Fluid Mechanical Transport (4)

Introduction to the basic physical processes which transport pollutants in natural waters (rivers, lakes, reservoirs, estuaries); mathematical formulations of heat and mass advective and diffusive transport; descriptions of molecular diffusion, turbulent diffusion, and dispersion. Use of predictive mathematical models as a basis for water and air quality management. Prerequisites: CE 361 and 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. Prerequisites: senior or graduate standing in civil or environmental 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 (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 361, CE 362 and CE 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: CE 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)

Intended as an overview of computers and computer technology for non-CS majors, this course is often described as a computer literacy course. The primary focus is on the personal computer and personal productivity software. Hardware components of computers such as processors, memory, and input/output devices are discussed and compared. Software is the primary focus of the course. The main topics are system software (Windows, OS X, etc) and applications (such as browsers, word processors, spreadsheets, presentation graphics and database managers). The course concludes with discussions concerning legal and ethical issues surrounding computer technology, management information systems, and systems analysis. Expected preparation: high school algebra.

CS 106

Computing Fundamentals II (4)

Introduction to programming, appropriate for non-CS majors. Introduction to the logical thought processes and problem-solving strategies used when programming. Concepts presented include problem definition and requirements gathering, generating a description of a step-by-step solution (the algorithm), writing a program, testing, and documentation. The programming language Visual Basic is used; several programming projects are completed during the term. Students who complete CS 106 with a grade of A or B will usually be able to progress to CS 162 successfully. Expected preparation: 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 page 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 Programming and Problem-solving (4)**

Introduction to fundamental concepts of computer science. Problem solving, algorithm and program design, data types, loops, control structures, subprograms, and arrays. Learn to write programs in a high level programming language. Surveys current social and ethical aspects of computer science. Recommended prerequisite: Mth 111.

CS 162**Introduction to Computer Science (4)**

The goals of this class are to teach the syntax of C++ to students who already know how to program. Students are expected to be proficient at using conditionals, I/O, loops, and functions with arguments. Topics include: conditionals, I/O, files, functions, classes, pointers, dynamic memory, linear linked lists, and multi-dimensional arrays in C++, as well as program correctness, verification, and testing. Three hours lecture and one 3-hour laboratory. The laboratory emphasizes practical programming skills. Prerequisites: CS 161 or prior programming experience. Co-requisites: concurrent enrollment in CS162L.

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 using pointer based implementations. Sorting and search strategies. Data management. Three hours lecture and one 3-hour laboratory. The laboratory emphasizes practical programming skills. Prerequisite: CS 162 with a grade of C or better. Co-requisites: concurrent enrollment in CS163L.

CS 199**Special Studies (Credit to be arranged.)****CS 201****Computer Systems Programming (4)**

Introduction to computer systems from a software perspective. Topics include: Basic machine organization, System programming using C and assembly language, Introduction to system programming tools (gcc, makefile, gdb), Data representation (bits & bytes, characters, integers, floating point numbers), Implementation of control flow, procedure calls, and complex data types at machine level, Linking and loading, Exceptions and interrupts, Process control and signals, System calls, File I/O, Timing and improving program performance, Introduction to memory hierarchy, dynamic memory allocation techniques. Prerequisite: CS 162.

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.

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. Expected preparation: Mth 251 recommended.

CS 251**Discrete Structures II (4)**

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. 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 specification 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. Prerequisites: CS 163, 201, 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. An appropriate programming language is used for programming experiments. Prerequisites: CS 250, 251.

CS 313**Artificial Intelligence and Game Design (4)**

Study of the basic principles of computer game design, the most popular techniques and technologies for game implementation, focusing on the many ways in which advances in artificial intelligence influences game design. Prerequisite: Prior computer programming experience equivalent to CS 163.

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 mod-

ern operating systems. Programming projects, including concurrent programming. Prerequisites: CS 201, 202.

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 345**Cyberculture: The Internet and Popular Culture (4)**

Study of the effect of computers and the internet on popular culture. Graduates of the course will become more intelligent and successful users of the Internet, understand how the internet works, be aware of the wide variety of applications that exist on the internet, and will understand the primary principles that underlie the success the Internet has had in changing popular culture. Typical topics will include history and technologies of the web, social networks, the long tail in business and culture, the power of groups, user generated content, complex systems, virtual worlds and the power of search. Prerequisites: Sophomore Inquiry: Popular Culture (Unst 254).

CS 346**Exploring Complexity in Science and Technology (4)**

This course introduces Complex Systems, an interdisciplinary field that studies how collections of simple entities organize themselves to produce complex behavior, use information, and adapt and learn. The focus will be on common principles underlying complexity in science and technology, and will include ideas from physics, biology, the social sciences, and computer science. This course is the same as SySc 346; course may be taken only once for credit.

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. Prerequisites: CS 250, 251, 311.

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 representation, problem solving, machine learning, natural language understanding, and AI search techniques. Prerequisites: CS 202.

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 445/545**Machine Learning (4/3)**

Provides a broad introduction to techniques for building computer systems that learn from experience; conceptual grounding and practical experience with several learning systems; and grounding for advanced study in statistical learning methods, and for work with adaptive technologies used in speech and image processing, robotic planning and control, diagnostic systems, complex system modeling, and iterative optimization. Students gain practical experience implementing and evaluating systems applied to pattern recognition, prediction, and optimization problems. Prerequisites: Mth 343, Stat 451, and CS 202.

CS 446/546**Advanced Topics in Machine Learning (4/3)**

Covers a number of more advanced topics in machine learning from a more mathematically-oriented view. Provides preparation for successfully using machine-learning techniques for various applications. Also provides preparation for graduate-level research in machine learning and adaptive systems. Prerequisite: CS 445/545.

CS 447/547**Computer Graphics (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 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 461/561**Open Source Software Development Laboratory (4/3)**

This course explores Open Source software engineering and its methodologies in a laboratory classroom setting. The focus of the course is the development and delivery of Open Source software projects by teams of 1-3 students. Students prepare and present material, working using email and the web. Prerequisites: CS 300.

CS 462/562**Advanced Open Source Software Engineering (4/3)**

This course surveys the growing academic literature describing tools, techniques, community management, project management and collaboration strategies used in open source software development. Emphasis is placed upon tool-driven development, upon open development processes and tools, and upon comparison with processes and practices in proprietary software. Prerequisites: CS 300.

CS 465/565**Construction and Analysis of Web-Based Applications (4/3)**

Covers the basics of writing both CGI-Bin and client-side scripts for the World Wide Web. Topics include the Client-server Model used by the World Wide Web; server-side programming; client-side programming; security and accessibility concerns; HTTP protocols; and human-interface issues on the World Wide Web. Recommended prerequisites: programming ability equivalent to CS 161 as well as familiarity using UNIX or Linux, and some familiarity with creating simple HTML files.

CS 469, 470**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 201, 202, 250, 251, 300, 311, 321, 333, 350. Non-CS majors: permission of the instructor.

CS 480/580**Randomized Algorithms and Probabilistic Analysis (4/3)**

Probabilistic tools used in the design and analysis of modern algorithms and data structures. Topics include: review discrete random, occupancy problems, tail bounds, Markov chains, the probabilistic method, martingales, Monte Carlo methods. The course explores a variety of CS applications. Prerequisites: CS 350, Stats 451.

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 486/586

Introduction to Database Management Systems (4/3)

Introduction to fundamental concepts of database management systems using primarily the relational model. Schema design and refinement. Query languages. Database application development environments. Overview of physical data organization, query optimization and processing, physical design, security, and transactions used in recovery and concurrency control. Prerequisites: CS 161, 250. Expected preparation: CS 251.

CS 487/587

Database Management Systems Implementation (4/3)

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 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 493/593

Digital Forensics (4/3)

Detailed, hands-on approach to the investigation of criminal incidents in which computers or computer technology play a significant or interesting role. Familiarization with the core computer science theory and practical skills necessary to perform rudimentary computer forensic investigations, understanding the role of technology in investigating computer-based crime, and preparation to deal with investigative bodies. Recommended: CS 333 or 533. No prior background in criminal justice or law is assumed.

CS 494/594

Networking 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 497/597

Sensor Networks (4/3)

Foundations of sensor networks, with a focus on activity-based learning through a sequence of hands-on programming exercises with embedded devices with a high-level programming language. Basic building blocks in designing and deploying a sensor network application. Positioning and time synchronization of networked sensor devices, wireless communication characteristics of low-powered radios, energy conservation and harvesting, macro-programming a network of sensor devices and security. Recommended prerequisites: Familiarity with computer systems concepts that could be satisfied by CS 201. Familiarity with programming in C, C++ or Java. Familiarity with basic concepts in probability and linear algebra that could be satisfied by Mth 301 or equivalent.

CS 498/598

Introduction to Wireless Network Protocols (4/3)

Classification of wireless networking systems; study of multiple access protocols in single hop and multi-hop networks; performance analysis of protocols; overview of emerging radio technologies for high-throughput next generation systems; study of wireless communication protocol standards for cellular systems; case studies of deployed systems. Prerequisites: CS 250 or ECE 271.

CS 501/601

Research (Credit to be arranged.)

Consent of instructor.

CS 503/603

Thesis (Credit to be arranged.)

Consent of instructor.

CS 504/604

Cooperative Education/Internship (Credit to be arranged.)

Consent of instructor.

CS 505/605

Reading and Conference (Credit to be arranged.)

Consent of instructor.

CS 506/606

Special Projects (Credit to be arranged.)

Consent of instructor.

CS 507/607

Seminar (Credit to be arranged.)

Consent of instructor.

CS 509

Practicum (Credit to be arranged.)

Consent of instructor.

CS 510/610

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 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 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 451, CS 202.

*CS 568/668

Functional Logic Programming (3)

Introduction to functional logic programming. Foundations and basic principles of this paradigm will be explained in some depth and complemented by encoding practical problems in a functional logic language using a leading compiler/interpreter. Focus on non-determinism and computations with incomplete information. Implementation techniques will be briefly discussed. Prerequisite: CS 558 Programming Languages.

CS 569/669**Scholarship Skills for Computer Science and Engineering (3)**

The purpose of this course is to make participants better scholars in Computer Science. In particular it attempts to help students become better researchers, better writers, better presenters, and better reviewers. It concentrates on reading, writing and composition skills: on the production and consumption of the "media" used by computer scientists to communicate professionally. At the completion of the course, students should be familiar with the tasks and activities of modern scholars in computer science. Prerequisite: admission into a Ph.D. program within MCECS.

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 interprocess communication. Prerequisite: CS 333.

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 578/678*Programming Language Semantics (3)**

Introduction to the formal mathematical study of program meaning (semantics), using one or more approaches such as operational semantics, denotational semantics, or programming logics. Emphasis on rigorous mathematical development and formal proof techniques. Language features to be studied may include types and type safety, purity and imperative effects, functional and modular abstraction, polymorphism, higher-order functions, and object-oriented features. Recommended prerequisites: CS 558 and/or CS 557.

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 logics 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 (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 (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 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 486/586 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 487/587.

CS 589/689*Principles of Database Systems (3)**

This course explores the foundations of database systems, with a focus on data models and query languages. It will show how formal methods are applied to issues in database design and processing. Topics may include query formalisms and their equivalence, query transformation, semi-structured data models, dependencies and normal forms, logic and deductive databases, data language complexity, treatment of incomplete information, complex-value models, semantic models and classification, and temporal databases. Recommended prerequisites: CS 486 or CS 586 or equivalent course; familiarity with discrete math and logic that could be satisfied by CS 250/CS 251 or by Mth 356.

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 vari-

ous 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 protocols, 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 101**Exploring Electrical Engineering (4)**

Freshman introductory course for students interested in electrical engineering. Students learn the design process, teamwork and presentation skills through completion of a hands-on project. Lab activities familiarize students with basic equipment and components. Speakers present an overview of different fields and career opportunities in electrical engineering.

ECE 102**Engineering Computation (4)**

Developing algorithms for solving simple engineering problems. Writing multiple short programs. Application of computational engineering software tools. Presenting technical content. Lectures, assignments and projects. Recommended preparation: ECE 101, Mth 112.

ECE 103**Engineering Programming (4)**

Software design, algorithms, data structures, and computation using the C programming language. Interfacing to sensors, actuators and other hardware. Writing documentation and presenting technical content. Recommended preparation: ECE 102, Mth 112.

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. Recommended: Mth 111.

ECE 199**Special Studies (Credit to be arranged.)**

Consent of instructor.

ECE 221**Electric Circuit Analysis I (4)**

Introduction to the basic methods of circuit analysis including Kirchhoff's laws, resistive circuits, techniques of circuit analysis, operational amplifiers, and energy storage elements. Weekly lab. Prerequisites: ECE 102, Mth 252.

ECE 222**Electric Circuit Analysis II (4)**

Introduction to the dynamic response of circuits, sinusoidal steady state analysis and the Laplace Transform for circuit analysis. Includes transient response and phasor and Laplace analysis. Weekly lab. Prerequisite: ECE 221.

ECE 223**Electric Circuit Analysis III (4)**

Frequency response and ac power. Includes transfer functions, design of analog filters, Bode plot analysis, pole-zero diagrams, and ac and three-phase power. Weekly Lab. Prerequisite: ECE 222.

ECE 241**Introduction to Electrical Engineering (4)**

DC circuit theory, passive electrical components, transient and sinusoidal steady state circuit responses, ac and three-phase power, op-amp circuits, and transformers; laboratory. Prerequisites: Mth 252.

ECE 271**Digital Systems (4)**

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 311**Feedback and Control (4)**

Classical control concepts for continuous-time, time-invariant, linear systems. Signal flow graphs. Routh-Hurwitz criterion, steady-state and root-locus analysis methods. Compensation methods derived from Bode plots. Software assignments for design and verification of controllers. Prerequisite: ECE 223, Mth 256.

ECE 312**Fourier Analysis (4)**

Continuous-time and discrete-time Fourier series, continuous-time Fourier transform, discrete-time Fourier transform, fast Fourier transform, sampling, aliasing, communications, modulation, discrete-time filters. Prerequisite: ECE 223.

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 rectifier topologies and biasing circuits. Application of a computer-aided design (CAD) tool, such as SPICE. Weekly Lab. Prerequisite: ECE 222.

ECE 322**Electronics II (4)**

Ideal and non-ideal OPAMP circuits; 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; Computer-aided design. Weekly Lab. Prerequisites: ECE 223, ECE 321.

ECE 323**Electronics III (4)**

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. Weekly Lab. Prerequisite: ECE 322.

ECE 331**Engineering Electromagnetics I (4)**

Fundamentals of electromagnetics including review of vector calculus, Maxwell's equations for time harmonic fields, plane wave propagation and reflection, and waveguide structures. Prerequisites: Mth 254, Mth 256, Ph 223 or Ph 213.

ECE 332**Engineering Electromagnetics II (4)**

Application of Maxwell's equations to transmission lines, antennas, and problems in electro/magneto statics. Topics in wave propagation such as scattering, optics, principles of radar, signal integrity and mathematical solution techniques; 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. Prerequisite: CS 201.

ECE 347**Power Systems I (4)**

Fundamentals of electrical power systems, particularly non-rotating three-phase power systems. Phasor representation. Complex impedance. Real, reactive, apparent power. Power factor. Non-sinusoidal representation: power quality, THD. Power factor, resonance, PF correction. Power Transformers. ABCD representation of two-port transmission networks. Power systems representation: single-line diagrams, per-unit representation. Power flow analysis. Weekly Lab. Prerequisites: ECE 223 or instructor permission.

ECE 348**Power Systems II (4)**

Fundamentals of electrical power systems, particularly rotating three-phase machines. Electromechanical machine components: rotor, stator, poles. Rotating magnetic fields. Fundamental rotational mechanics. Three-phase (induction and synchronous) and split-phase AC motors and generators. DC machines: shunt, series, compound and brushless. Motor and generator controls. Weekly Lab. Prerequisites: ECE 347, or instructor permission.

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 of a 32-bit microprocessor, 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. Prerequisites: ECE 103 or CS 162, 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 373**Embedded Operating Systems and Device Drivers (5)**

Extends the microprocessor interfacing skills gained in ECE 372 to the design of hardware and device drivers for a microprocessor system with an embedded operating system. After a brief introduction to the basic structure and operations of the Linux OS, students will gain extensive practice developing Linux device drivers for a wide variety of hardware devices. Course will also include discussions of security and power management techniques commonly used in embedded microprocessors systems. Prerequisites: ECE 372 and corequisite CS 333.

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 (4)**

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 and presenting project proposals; the design process; project scheduling and management; intellectual property, non-disclosure agreements, and professional ethics; design for X, design for manufacturing, design for the environment; contemporary issues in engineering; lifelong learning. Class consists of lectures and a small team-based term project. Prerequisite: senior standing in the University and completion of all junior-level required ECE classes. For non-ECE majors, consent of the 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. Prerequisites: ECE 411, ME 491, or UnSt 421 (Industry Design Processes), Wr 227 or Wr 327.

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 414/514**Microsystems Integration and Packaging (4)**

Introduction to integrated circuit packaging and microelectronics system integration; signal integrity; electrical, mechanical, and thermal aspects of microsystem package simulation and design; electronics packaging materials; microsystem reliability and failure mechanisms; current technology developments. Prerequisites: Senior or graduate standing in ECE.

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 micro-electronic 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 417/517**Nanoelectronics (4)**

Operational principles and circuit applications of nanoelectronic devices: electron tunneling devices, (Esaki and resonant tunnel diodes, single electron transistors, nanodot arrays) carbon nanotubes, nanowires, molecular electronics, and spintronics; nano-fabrication techniques. Prerequisites: ECE 322 and PH 319.

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 420/520**Analytical Methods for Power Systems (4)**

Power systems modeling. Admittance matrices. Load flow computational methods; Gauss-Seidel, Newton-Raphson, DC, fast-decoupled power flow. Sparsity techniques. Optimal power flow algorithms. Symmetrical components, sequence networks. Symmetric, unsymmetric faults. Space vector transformations. Transient operation of transmission lines. Voltage, frequency stability. State estimation. Transient stability. Power system analysis emphasizing non-dispatchable resources. Prerequisites: ECE 347, or instructor permission.

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. Prerequisites: ECE 321, 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 435/535**Radar and Sonar Processing (4)**

Introduction to radar and sonar processing including detection and estimation theory, array processing, and signal propagation models. Course will concentrate on physics-based processing techniques applied to real systems with application to remote sensing, underwater sonar and medical imaging. Pulsed systems and spectroscopy may also be covered in the context of terahertz sensing. Coursework will involve readings from current scientific journals and MATLAB data processing. Prerequisites: ECE 331, 332.

ECE 436/536**Applications in Electromagnetics, Optics, and Acoustics (4)**

Introduction to applications of electromagnetics (EM), optics, and acoustics in engineering fields. Specific topics will change, but may include (EM): antenna design, electromagnetic interference, microwave and terahertz sensing, waveguide design, and wireless communications; (optics) lasers and LEDs, holography, diffraction and scattering; (acoustics) commercial audio, underwater acoustics, medical ultrasound, and active noise control. Course content will consist of project-based laboratory activities and reading assignments from current publications. Prerequisites: ECE 331, 332.

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 magnetics 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 448/548

Power System Protection (4)

Relaying concepts, per unit calculations & symmetrical components, phasors, polarity and direction sensing, current/voltage transformers, protection fundamentals & basic design principles, system grounding principles, device protection, directional comparison, blocking & blocking pilot protection, line differential & phase comparison pilot protection, out of step tripping and blocking. Weekly Lab. Prerequisites: ECE 420/520, or instructor permission.

ECE 449/549

Power Systems Design (4)

Design fundamentals as applied to power systems. Electrical design: electrical equipment, insulation, protection, grounding. Mechanical design: clearances, siting, support structures. Right-of-way. Asset management. Commissioning. Applicable codes and standards. Course topics will be taught by focusing on a particular subset of power systems such as transmission, distribution, substations or generation. Prerequisites: ECE 448/548, or instructor permission.

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 reasoning 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. Prerequisite: ECE 371.

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 524/624

Advanced Embedded In Silico and In Materio Computing (4)

Introduces and develops the advanced hardware and software concepts, design methodologies, and programming paradigms of emerging embedded *in silico* and *in materio* computing systems. Topics covered: physics of computation, spatial computing paradigms, self-assembly and self-organization, morphogenetic systems, molecular and nano-scale computing, non-classical computing and non-classical programming paradigms, amorphous computing. Prerequisites: ECE 371 or permission of the instructor.

***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**

CAD for VLSI & Emerging Technologies (4)

Course will cover Computer-Aided Design (CAD) challenges for ultra submicron CMOS system design and circuit and system design in new emerging technologies. It will cover (1) system design approaches and optimization techniques in the presence of process and environmental parameter variations (2) statistical approaches to circuit and system design, (3) physical design (layout) role in performance evaluation of digital systems, and (4) design and architecture outlook for beyond CMOS switches. Prerequisite: ECE 428/528 or consent of instructor.

***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 534/634

Acoustics (4)

Fundamentals of linear acoustics: acoustic wave equations, scattering theory and acoustic propagation. Numerical techniques. Applications emphasizing underwater acoustics and medical ultrasound. Prerequisite: graduate standing.

ECE 537

Advanced Topics in Power Systems (4)

In-depth exploration of a challenging contemporary topic within power systems. Each offering of this course focuses on a specific topic; this is not a survey course. Prerequisites: ECE 420/520 or instructor permission.

***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 539/639

Statistical Signal Processing II: Linear Estimation (4)

Unified introduction to the theory, implementation, and application of statistical signal processing methods. Focus on optimum linear filters, least square filters, the Kalman filter, signal modeling, and parametric spectral estimation. Designed to give a solid foundation in the underlying theory balanced with examples of practical applications and limitations. Recommended: ECE 538/638.

ECE 540

System on Chip Design with FPGAs (4)

Tools and techniques for designing, verifying and implementing System-on-Chip (SoC) designs using an FPGA development board. Along with class work, students take several projects from concept through synthesis and debug using key techniques for optimizing a design. Recommended: ECE 351 or equivalent.

ECE 541

Transmission Operation and Control, (4)

State estimation, security analysis, contingency monitoring, optimal power flow, reliability, interchange of energy, markets and pool operation. Prerequisites: ECE 348, or instructor permission.

ECE 542

Generation Operation And Control (4)

Power generation unit characteristics, economic dispatch, unit commitment, flow constraints and limited energy supply, automatic generation control, production cost models, interchange of power and energy, extended auction mechanisms and reliability. Prerequisites: ECE 348, or instructor permission.

ECE 543

Power 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. Prerequisites: ECE 448/548, or instructor permission.

ECE 544

Embedded System Design with FPGAs (4)

Students take several embedded system projects from concept through debug on an FPGA development board while learning how to design and implement integrated hardware/software applications that interact with "real world" devices. Xilinx software tools and the GNU tool chain are used. Programming is done in C/C++. Prerequisite: ECE 540 or consent of instructor.

ECE 547

Energy Economics (4)

Electric power operation and information systems, optimization methods, information technologies, short-term electricity markets and locational marginal prices, risk management and financial derivatives, basics of public-good economics, optimization methods. Prerequisites: ECE 347, or instructor permission.

***ECE 559**

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, evolvable hardware problems, and constrained parameter optimization problems. Survey of current technical literature in evolutionary computation. Prerequisite: CS 163 or equivalent.

***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 571

Introduction to System Verilog for Design and Verification (4)

Introduction to SystemVerilog: language features to support both design and verification. Good practices for simulation and synthesis, techniques for constructing reusable testbenches. Additional topics may include hardware acceleration and transaction-based verification techniques. Course includes homework and significant final project with presentation. Familiarity with Verilog and finite state machines required. Prerequisites: ECE 351 or equivalent, or permission of instructor.

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 chang-

ing 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 580

Advanced Power Systems Protection (4)

The second course protection for students who have taken a previous class or have substantial experience in protective relaying. Emphasis: analysis of principles and application of microprocessor-based relays (digital relays) to protection of high-voltage transmission lines, power transformers, power generators, high-voltage substation equipment; wide-area approach to power systems protection. Prerequisites: ECE 448/548, or instructor approval.

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 584/684

Nanotechnology and Biosensors (4)

Overview of basic materials and methods in developing "lab-on-a-chip" based devices. Materials section involves an analysis of silicon-based devices, polymer based devices and nanomaterial based devices. Methods section covers the key features of micro fabrication, soft lithography, microfluidics, and nanofabrication. Applications section focuses on integration of micro and nanoscale structures for "lab-on-chip" devices. Prerequisites: graduate standing.

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, superscalar 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 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 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.

ECE 641**Power System Planning (4)**

Regulatory issues, power quality, system design for reliability, transient and voltage considerations, distributed generation, information technology requirements, market implications, remedial action and contingency analysis, NERC requirements. Prerequisites: ECE 420/520, or instructor permission.

Engineering and Technology Management

ETM 501**Research (Credit to be arranged.)****ETM 502****Independent Study (Credit to be arranged.)****ETM 503****Thesis (Credit to be arranged.)****ETM 504****Cooperative Education/Internship
(Credit to be arranged.)****ETM 505****Reading and Conference
(Credit to be arranged.)****ETM 506****Special Projects (Credit to be arranged.)****ETM 507****Seminar (Credit to be arranged.)****ETM 510****Selected Topics (4)****ETM 511/611****Technology Management Writing and
Presentations (4)**

Students will learn to develop written deliverables and presentations that professional technology managers and leaders are called on to produce—reports, analyses, persuasive write-ups, announcements, presentations (prepared and impromptu), proposals and website content. Students will examine and critique examples of professional communications, as well as edit the works of others in the class. Emphasis on creativity, organization, voice, audience and objectives for the communications. Discussion topics also include professional writing standards—ethics, research and references, style considerations and requirements—as well as how to structure, organize and present academic writing.

ETM 518/618**Ethical Issues in Technology Management (4)**

Designed to meet the needs of engineers who are or will be moving into greater responsibility for management as they advance in the profession. Emphasizes the theory of ethical behavior as it relates to real world applications faced regularly in the business world today.

ETM 519/619**Human Side of Technology management (4)**

Introduction to leadership and human resource management issues that technical managers are confronted with while managing their culturally diverse workforce of technicians, scientists and engineers.

ETM 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, motivation and leadership theories applicable to engineers and scientists, technological entrepreneurship, strategic management of technology and system interfaces in existing and emerging technologies are discussed in the course. Ongoing engineering and technology management research is critically evaluated in classroom discussions. Case studies and team projects are included.

ETM 522/622**Communication and Team Building (4)**

Developing high performance teams for engineering- and technology-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.

ETM 525/625**Strategic Planning (4)**

Critical issues in shaping the competitive strategy for the engineering- and technology-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.

ETM 526/626**Strategic Management of Technology (4)**

Analyses of the structure and competitive dynamics of technology-driven industries; resource- and knowledge-based frameworks for competitive advantage, which are applied to technology-driven industries; as well as a discussion of corporate, international and global strategies for technology-driven ventures.

ETM 527/627**Competitive Strategies in Technology
Management (4)**

Provides perspectives, theories and methods used to analyze, formulate and implement competitive strategies in technology intensive industries. Provides a historical perspective on the evolution of competitive strategy theory and techniques including their foundations with key concepts and issues from strategic management thought leaders and present examples of the application of those concepts in business situations. Covers frameworks and tools used for strategy analysis, development and implementation.

ETM 530/630**Decision Making (4)**

Decision and value theory concepts are applied to technical and management decisions under uncer-

ainty. 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: ETM 520/620, knowledge of probability/statistics.

ETM 531/631**Technology Assessment & Acquisition (4)**

Fundamental concepts of assessing technologies including evaluation attributes and methodologies, impacts and impact relationships, and technology diffusion from individual, organizational, technical and market perspectives. Case studies, professional and research articles, and guest speakers from local companies included.

ETM 532/632**Technology Forecasting (4)**

Fundamental concepts of technology forecasting. Differences between ordinary forecasting and technology forecasting, objectives of technology forecasting, tools and methods and their applications, selection of the right forecasting methodology, planning for technology forecasting, identifying attributes for forecasting, and managing technology forecasting. Topics are discussed through case studies, professional and research articles, guest speakers from local companies, and recently published books.

ETM 533/633**Technology Transfer (4)**

Fundamental concepts of transferring technologies. Topics include university, industry and government collaboration for technology development, transfer of technologies from labs into product groups, research and development consortia, and international technology transfer. Case studies, professional and research articles, and guest speakers from local companies included.

ETM 534/634**Technology Roadmapping (4)**

Introduces Technology Roadmapping (TRM), which provides a structured approach for exploring and communicating the relationships between evolving and developing markets, products and technologies over time. Roadmaps allow technology developments to be integrated with business planning, and the impact of new technologies and market developments to be assessed. Roadmaps also seek to capture the environmental landscape, threats and opportunities for a particular group of stakeholders in a technology or application area.

ETM 535/635**Advanced Engineering Economics (4)**

Economic evaluation of engineering and R&D projects is covered from the engineering management viewpoint. Time value of money, tax considerations, break-even analysis, sensitivity analysis, project evaluations under uncertainty, risk sharing, capital budgeting, financial ratios, and cost estimating techniques are studied. A business simulation game is used throughout the course to gain a better understanding of financial decision making. Prerequisite: knowledge of probability/statistics.

ETM 536/636**R&D Management (4)**

Managerial aspects of Research and Development (R&D) including special issues in managing research at national labs, university settings, and industry labs. Reviews evaluation methods and multi objective analysis used for R&D project

selection. Development analyzed across the following venues: Roadmap Development, Ecosystem Development, Platform Development, Product Development, Technology Development, Prototype Development, Initiative Development. Focus on integration of research and development functions; project management challenges resulting from the uncertain nature of R&D; and the difficulties in measuring on-going R&D outputs.

ETM 537/637

Benchmarking Using Data Envelopment Analysis (4)

This course focuses on data envelopment analysis, a powerful and flexible technique for quantitative benchmarking and productivity analysis. Applications and case studies from a wide range of areas including engineering, health care, education, financial services, new product development, technology forecasting, and non-profit organizations will be included. Prerequisites: linear programming.

ETM 538/638

Decision Support Systems: Data Warehousing (4)

Critical issues in developing data warehouse for decision support systems. Examines when and why an organization needs a data warehouse for decision support systems; how to organize data in a data warehouse; complications in designing a data warehouse system; and identifying resources.

ETM 540/640

Operations Research (4)

This course covers the use of operations research techniques in making engineering and technology management decisions. The primary emphasis is placed on applying and interpreting linear and integer programming. Problem formulations, mathematical model building, the basic principles behind the Simplex algorithm, and multiple objective linear optimization are included in the course. Post-optimality analysis is studied from the viewpoint of technology management. Other operations research techniques such as queuing models will also be covered. The course includes a

term project involving an actual operations problem.

ETM 543/643

Front End Management for New product Development (4)

Provides students with an understanding of the activities and challenges of managing the early stages of new product development, the so-called "fuzzy front-end". It covers concepts, methods and tools for bridging the gap between strategic planning and new product development, for identifying opportunities, for generating and selecting product ideas, for developing product concepts, and for selecting new product development projects.

ETM 544/644

Organizational Project Management (4)

Covers the strategic components which drive the integration of initiatives, goals and projects within an organization. It involves the three primary domains of Portfolio, Program and Project Management. These domains support the management of business units, functions or company divisions and need to be in alignment for the business organization to be effective in pursuit of its vision. Includes coverage of macro level project management topics such as project management maturity models and the micro level such as agile project management.

ETM 545/645

Project Management (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 and termination of projects. Case discussions and term project are included in the course. Prerequisites: ETM 520/620 or consent of instructor.

ETM 546/646

Project Management Tools (4)

An in-depth study and review of the major problems and analytical techniques used in the planning and implementing of major industrial projects. Specific focus on three primary areas: (1) time management: network scheduling techniques, including CPM/PERT, Critical Chain, etc., (2) cost: earned value analysis, and (3) risk: management techniques such as Monte Carlo analysis. An emphasis is placed on the integration of the techniques in the areas. The contingency approach to designing a project management toolbox based on the three areas of time, cost, and risk management is included. Prerequisites: ETM 545/645 or project management experience.

ETM 547/647

New Product Development (4)

Examines complete product development process and key issues in new product development critical to developing profitable products in today's technology oriented companies. Topics include technology integration, disruptive technologies, concurrent engineering, and creating innovative environments. Review of cases and published articles addressing these issues. Students develop a plan for a new product including risk assessments in areas such as manufacturing, design, and testing.

ETM 548/648

Managing New Technology Introduction (4)

Management procedures and key underlying concepts for effective planning, development, and introduction into volume production utilizing new technology. Emphasis on semiconductor technology and manufacturing but most principles and methodologies are generally applicable to both hardware and software.

ETM 549/649

Management of Technology Innovation (4)

Describes and explains phenomena pertaining to technological innovation. Focus on the interplay between engineering/technology and the economical, cultural, psychological, social and technical aspects of the engineering environment. Provides technology managers a toolkit to make engineer-



ing and technical innovations successful. Also covers how engineering and technology management enables technological innovation.

ETM 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.

ETM 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 include aggregate production planning, enterprise requirements planning, and concurrent engineering. Prerequisite: Background in manufacturing at the level of ETM 550/650, equivalent, or consent of instructor.

ETM 553/653

Manufacturing Systems Simulation (4)

Introduction of discrete simulation techniques for the modeling of random processes and probabilistic events in the simulation of manufacturing systems; concepts of systems modeling with emphasis on the use of an animated simulation package throughout the course. Prerequisite: basic knowledge of probability and statistics.

ETM 554/654

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.

ETM 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.

ETM 556/656

User-Centered Innovation (4)

Introduction to the various strengths and weaknesses of approaches to innovation. Focuses on a customer-driven methodology and introduces the increasingly prominent role of design in creating memorable experience, and emotional connection with a product and/or a company.

ETM 558

Engineering Financial Management (4)

Teaches key concepts of financial and cost management and their linkage to overall business strategies for nonfinancial managers. Emphasizes the educational needs and perspective of function-

al and project managers in engineering and research. Prerequisites: graduate standing.

ETM 559/659

Global Management of Technology (4)

Explores issues associated with the management of technology-driven industries in a global setting. Strategic planning and management of technological innovation and commercialization are explored in selected countries, using processes in the US as benchmarks. A specific objective of this course is to explore ways to manage the development of competitive products or services, using project teams focused on one or more countries.

ETM 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.

ETM 561/661

Technology Entrepreneurship (4)

Examines how to start and grow a high technology company or high technology venture. Covers the complete venture creation process: key issues in high tech markets, startup finance, growth strategies and exit strategies. Guest lectures by practicing entrepreneurs, executives and financiers. Student teams create a technology startup business around technology that they develop, write a business plan and present their technology business idea to a financier.

ETM 562/662

New Venture Management (4)

Explores actual emerging technologies that are likely to impact or create technology-based industries in the next 1-5 years, and gives a framework for identifying, analyzing, acquiring, implementing and finally commercializing leading-edge technologies into new products or services.

ETM 563/663

Entrepreneurship in Technology, (4)

The development of new products and services is fundamental to sustaining a long-term competitive advantage. The efforts of the individual or team of entrepreneurs who are responsible for this activity become even more complex when the activity must be carried out inside an existing ongoing business. Explores a procedural framework, along with typical issues often encountered such as resources, timing, political conflicts, bureaucracy, and other obstacles that must be overcome to succeed in developing products within an existing company. Recommended prerequisites: ETM 555/655 and ETM 535/635.

ETM 564/664

Probability and Statistics for Technology Management (4)

Provides coverage of probability and statistics concepts with a balance of both engineering and managerial orientations with relevant applications. Topics include probability distributions, sampling, statistical inference, hypothesis testing, and regression. Technology management research papers using these approaches will be examined and a group project will apply these techniques to real world cases.

ETM 565/665

Research Methods for Engineering and Technology Management (4)

This course provides coverage of a range of techniques employed in technology management research and issues confronting new researchers. It is open to students enrolled in graduate programs or considering Ph.D. programs both in ETM and from other departments. Statistical topics include a variety of statistical techniques including proper selection, use, and interpretation of parametric, nonparametric, and multivariate techniques. Additional topics covered include literature review methods and tools, hierarchy of research questions, survey design, research ethics, and visual display of quantitative information. Prerequisites: probability and statistics or consent of instructor.

ETM 567/667

Knowledge Management (4)

Introduction to some of the critical issues and debates in knowledge management. Stresses the human and business aspects of knowledge management. Taught from the perspective of the user of technical tools and methods.

ETM 568/668

Energy Technology Innovations (4)

Reviews management of technology and innovation in the energy sector. Specifically, focuses on the technology development highlighting the unique differences of the energy sector. Prerequisites: graduate standing.

ETM 570/670

Role of Government in Technology Management (4)

In their desire to grow their nation's economies, governments often play an enormous role in fostering and regulating technology-related industries. Explores the connection between the GDP and its growth that is driven by technology and technology businesses.

ETM 571/671

Managing Emerging Technologies (4)

Explores 10 current emerging technologies that are likely to impact or create technology business industries in the next 5-10 years. Develops a framework for identifying, analyzing, implementing and finally commercializing leading-edge technologies into new products or services or services.

ETM 573/673

Management of Intellectual Capital (4)

Learn strategies that technology companies use to maximize profits through intellectual capital, with a focus on legally protected intellectual property. Understand that companies in different industries require different strategies. Learn how to research a company's intellectual capital and prepare an appropriate intellectual capital management plan.

ETM 575/675

Science and Technology Policy (4)

Presents concepts and techniques for analyzing and formulating national science & technology policy, explains the process of transforming scientific knowledge into technical knowledge to design innovative products and services, and highlights the organizational interactions of research in science and technology to create national technical capabilities for economic development. Prerequisites: graduate standing.

ETM 590/690

Engineering and Technology Management Synthesis (4)

This is the capstone course in the Master of Science in Engineering and Technology Management. 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 Engineering and Technology Management. Prerequisites: completion of at least seven courses in the MSETM curriculum.

ETM 601

Research (Credit to be arranged.)

ETM 602

Independent Study (Credit to be arranged.)

ETM 603

Thesis (Credit to be arranged.)

ETM 604

Cooperative Education/Internship (Credit to be arranged.)

ETM 605

Reading and Conference (Credit to be arranged.)

ETM 606

Special Problems/Projects (Credit to be arranged.)

ETM 607

Seminar (Credit to be arranged.)

ETM 610

Selected Topics (4)

Mechanical Engineering

ME 120

Introduction to Engineering (3)

An introduction to the skills, modern tools, teamwork, design methodology and professional practices of mechanical engineers. Students learn to analyze, fabricate and troubleshoot electromechanical systems. Students are introduced to computer programming and solid modeling. Written and oral communication is required complete assignments and class projects. Co-requisite: Mth 111.

ME 121

Introduction to Systems and Controls (3)

An introduction to sensors and control of electromechanical systems. Students assemble an electromechanical system and program a microcontroller to sense the system state and maintain system equilibrium. Students build on the skills developed in ME 120. Written and oral communication is required complete assignments and class projects. Prerequisites: ME 120.

ME 122

Introduction to Design (3)

An introduction to statics, dynamics, mechanical systems and the design process. Students learn to incorporate economic, social and environmental factors in the design of mechanical devices. Written and oral communication is required complete assignments and a major class project. Prerequisites: ME 121.

ME 199

Special Studies (Credit to be arranged.)

Consent of instructor.

ME 213

Properties of Materials (4)

Basic properties, behavior, and survey of engineering and industrial applications of metals, polymers, ceramics, and composites. Prerequisites: Ch 221. Lecture and laboratory.

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. Prerequisites: ME 213.

ME 299

Special Studies (Credit to be arranged.)

Consent of instructor.

***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 320

Fluid Mechanics (4)

Properties of fluids; hydrostatics; fluid dynamics, Bernoulli's Equation; conservation of mass, energy, and momentum; differential analysis; and dimensional analysis. Prerequisites: EAS 215, Mth 256. Lecture and laboratory.

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 213 or Ph 223, Mth 252.

ME 322

Applied Fluid Mechanics and Thermodynamics (4)

Internal flow, external flow, and compressible flow. Lift and drag. Turbomachinery, combustion, and psychrometry. Prerequisites: ME 320, 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 256, Mth 261, ME 320, ME 321.

ME 350

Programming and Numerical Methods (2)

Introduction to programming. Topics include: MATLAB programming; variables, arrays, logical expressions, and loops; structured programming with m-files, input and output control; introduc-

tion to engineering applications of numerical computing. 2 credits. Prerequisites: EAS 101, Mth 261.

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 256, Mth 261, ME 320, ECE 241, ME 350.

ME 370

Mechanical Engineering Profession (2)

Presentation of a variety of specialties and career options for the graduates of the BSME program. Includes exposure to topics related to effective and responsible practice of mechanical engineering. Topics include: engineering ethics, intellectual property, business norms and practices, life-long learning, the relationship of engineering to society, and an awareness of contemporary local and global issues. Expected preparation: junior standing.

ME 399

Special Studies (Credit to be arranged.)

Consent of instructor.

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 241, senior standing in engineering.

***ME 413/513**

Engineering Material Science (4)

Study of materials with emphasis on solids; effect of microstructure and macrostructure on proper-

ties; 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: ME 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 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 320, ME 323.

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 Modeling(4)

Analysis of annual energy use of residential and commercial buildings. Emphasis on computer 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, daylighting in commercial buildings, energy efficiency, green building technologies, and modeling for energy code compliance. Project in design/simulation.

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 heating, cooling, and ventilating systems. Indoor air quality and other health and safety issues, including assessing and resolving moisture

problems. Applications of common and cutting-edge building science measurement and monitoring tools. The class will include one lecture and one lab session each week. Some/all of the lecture portion of the course may be delivered on-line through course-management software. Group projects may involve laboratory measurement, field monitoring, and/or computer simulation. Prerequisite: ME 321 (Thermodynamics) or graduate standing in engineering or architecture.

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 426/526

Solar Engineering (4)

Overview of solar energy and its applications. Solar resources, solar economics, collector technology, solar thermal systems, power generation, industrial applications, thermal storage, photovoltaics, and design of systems for effective utilization of solar energy. Prerequisite: ME 323.

***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 438/538

Fundamentals of MEMS and Microsystems (4)

The underlying principles of physics, mechanics and materials science as they apply to MEMS will be covered and coupled closely with the basic and applied aspects of microsystems engineering. Case studies involving the design, operation, fabrication and packaging of MEMS devices will be presented throughout the class. Prerequisites: senior or graduate standing.

***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: ME 320.

***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 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 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, ME 320, 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 241; 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 454/554

Controls Engineering Laboratory (4)

Design, construction and implementation of continuous controllers using analog devices. Experimental identification of the dynamic properties of mechanical systems. Digital controllers introduced, implemented and compared with the corresponding continuous controllers. Recommended prerequisite: ME 453/553. 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 460/560

Microcontrollers Laboratory (4)

Basic interfacing and programming of microcontrollers for controls applications is introduced. Microcontrollers are interfaced with various external devices and sensors using A/D, D/A, and the SPI bus. Control of a motor driven mechanical device is implemented. A student selected final project involving the control of a physical system is required. Prerequisites: ME 453/553. Co-requisite: ME 454/554.

*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 465/565

Advanced Finite Element Applications (4)

This course builds on the knowledge of introductory finite element modeling and analysis course to provide students with advanced working knowledge to tackle real world problems. Advanced element types such as Plate and Shell as well as Gap and Contact will be discussed. Advanced modeling and analysis topics include nonlinearity in stress analysis (including geometric and material nonlinearity), Buckling, Gap/Contact analysis, forced vibration and frequency response, advanced thermal/structural interactions, and mixed element

modeling. Prerequisites: ME 455/555 or equivalent.

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; ECE 241.

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; pre-heat 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 metallography, 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 478/578

Introduction to Electronic Packaging (4)

This course provides a foundation on mechanical and materials aspects of electronic packaging as well as an understanding of the fundamental mechanical principles used in the design of electronic packages, boards, sub-systems, and systems with focus on their integration. Topics include design, properties, materials, interconnections, assembly processes, performance of various packaging systems, thermal management, failure mechanisms and reliability. Prerequisite: ME 313 or equivalent.

*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 451 CM.

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 322, ME 351, Wr 327.

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 530/630**Solid Mechanics (4)**

This course provides the knowledge of mechanics, physics, and mathematics that concerns the behavior of solids under external actions including external forces, applied displacements, temperature changes, moisture diffusion, etc. Topics include kinematics of deformation and motion, Lagrangian strain tensor, Cauchy stress tensor, elasticity and plasticity. Prerequisite: undergraduate mechanics ME 313 or equivalent.

ME 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 non-ideal 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 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 562*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 588*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 451 CM.

ME 596*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 507**Seminar (Credit to be arranged.)**

Consent of instructor.

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.

Oregon Master of 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**Software Project Management (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 517**Agile Software Development (3)**

Designed for graduate level software engineering students who are interested in learning and applying the fundamentals of the Agile software development process in the real world. Explores Agile concepts both in theory and practice. Introduction to the principles and foundations of Agile Development, XP (Extreme Programming) and the SCRUM methodology. Also introduces the students to day-to-day life on an Agile team. Expected preparation: OMSE 500.

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 525**Software Quality Engineering (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. Prerequisites: OMSE 531.

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. Prerequisites: OMSE 531.

OMSE 534

Software Estimating (3)

Software estimating techniques and tools enable the responsible software engineering manager to assess project feasibility, secure adequate budgets, and manage project tasks and schedules. The student learns how to make viable software estimates to consistently inform software project planning, scheduling, and oversight. The full range of software estimating methods and tools are explored. Prerequisites: OMSE 500, OMSE 511.

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 Engineering Practicum I, II (3, 3)

The objective of the practicum is to provide hands-on software engineering management and development experience applying the principles, methods, processes and tools learned from OMSE courses. The practicum is comprised of two parts and organized as two courses, OMSE 555 and OMSE 556 (3 credits each) completed in sequence. The class is grouped into one or more integrated project teams jointly undertaking a coordinated software engineering problem. The evaluation (grading) process equally weights group and individual performance. Problems undertaken by student teams apply the practices learned in OMSE classes across the software engineering process. Projects range from technical evaluations, analysis and specification, through architectural design to prototype development and testing. Every project involves applying best project management, quality assurance and configuration management practices. Prerequisites: all core OMSE courses.

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 567

Systems Engineering Management (4)

Management techniques applicable to Systems Engineering as part of its interface role to integrate project control (cost and scheduling) and technical specialties, including evaluating new technologies and integrating with legacy systems, technical performance measures, development-process tailoring, maturity assessment models, conducting technical reviews. Expected preparation: SysE 591.

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 will be 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.

College of Liberal Arts and Sciences

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SHELLY CHABON, ASSOCIATE DEAN
VERONICA DUJON, ASSOCIATE DEAN
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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, Communication, Conflict Resolution, Economics, English, Environmental Science and Management, Geography, Geology, History, Indigenous Nations Studies, International Studies, Judaic Studies, Mathematics and Statistics, Philosophy, Physics, Psychology, Science Education, Sociology, Speech and Hearing Sciences, Women, Gender, and Sexuality Studies, and World Languages and Literatures. Undergraduate and graduate degree programs and certificates available through the college are listed on page 7.

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 tracks 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 274.)

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, Geographic Information Systems, Geography, Geology, History, Indigenous Nations Studies, International Studies, Mathematics and Statistics, Medieval



Studies, Philosophy, Physics, Psychology, Sociology, Sustainability, Women, Gender, and Sexuality Studies, World Languages and Literatures, 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.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

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, Communication, Economics, English, Geography, Geology, History, Mathematics and Statistics, Physics, Psychology, Sociology, or World Languages and Literatures. 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

MINOR IN ELEMENTARY EDUCATION

The Minor in Elementary Education is intended for students who plan to enter a graduate teacher education program and be licensed in Early Childhood/Elementary Education. While the minor is not a requirement for admission to the PSU Graduate Teacher Education Program (GTEP), it does include all the prerequisites for admission to the program. Students seeking a license for early childhood and ele-

mentary education must complete a graduate-level licensure program. The Graduate School of Education provides the teacher licensure as part of the GTEP.

Degree Requirements:

Required Coursework	Credit hours
Language Arts (7 credits)	
Lib 428 (3), Children's Literature, K-5.....	3
Ling 233 (4), Language and Mind.....	4
Sciences (8 credits)	
G 355 (4), Geosciences for Elementary Educators	4
Sci 311 (4) Teaching Everyday Science	4
Math (12 credits)	
Mth 211 (4), 212 (4), & 213 (4) Fundamentals of Elementary Mathematics.....	12
Education (7 credits)	
Ed 420 (4), Introduction to Education	4
SpEd 418 (3), Survey of Exceptional Learner.....	3
Social Studies (8 credits)	
Psy 311 (4), Human Development.....	4
Soc 337 (4), Minorities	4
Fine and Performing Arts (7 credits)	
Art 312 (3), Art in the Elementary School.....	3
Mus 381 (4), Music Fundamentals.....	4
Health (4 credits)	
PHE 250 (4), Our Community, Our Health OR PHE 365 (4), Health Programs for Children and Youth	4
Total	53*

* The total may vary depending on the transfer of community college equivalent courses which carry, in some cases, fewer credits. A minimum of 18 credits must be upper-division. Only grades of C- or above may be counted toward these requirements. Students must take all coursework for differentiated grades. At least 16 credits must be in residence at PSU. A minimum cumulative GPA of 2.5 in coursework is required.

MINOR IN SECONDARY EDUCATION

The Minor in Secondary Education is intended for students who plan to enter a graduate teacher education program and be licensed in Secondary Education. While the minor is not a requirement for admission to the PSU Graduate Teacher Education Program (GTEP), it does include the prerequisites and highly recommended courses for admission to the program. Students must also complete the content courses required by the department for the subject they plan to teach to apply to GTEP.

Students seeking a license for secondary education must complete a graduate-level licensure program. The Graduate School of Education provides the teacher licensure as part of the GTEP.

Core Courses

Ed 420 Intro to Education and Society..... (30 hours practicum)	4
CI 432 Computer Applications in the Classroom ...	3
Psy 311 Human Development	4
Soc 337 Minorities.....	4
SpEd 418 Survey of the Exceptional Learner	3

Electives (choose 2 classes)

7-10	
Anth 315 American Culture OR BSt 302 African Am. Exp. in the 20th Century OR ChLa 301 Chicano Latino Communities.....	4
CFS 485 Working with Diverse Families OR CFS 490 Sex and the Family.....	4
Lib 429 Young Adult Literature	3

Phl 331 Philosophy of Education	4
Psy 345 Motivation OR Psy 346 Learning	4
SpEd 460/UnSt 421 Outdoor Education/ Recreation With Persons with Disabilities	6
Or adviser approved elective	4
Total	25-28*

* The total may vary depending on the transfer of community college equivalent courses which carry, in some cases, fewer credits. A minimum of 18 credits must be upper-division. Only grades of C- or above may be counted toward these requirements. Students must take all coursework for differentiated grades. At least 16 credits must be in residence at PSU. A minimum cumulative GPA of 2.5 in coursework is required. Students must also complete the required content courses for the subject they plan to teach to apply to GTEP.

MINOR IN SPECIAL EDUCATION

The Minor in Special Education is intended for students who plan to enter a graduate teacher education program and be licensed to teach Special Education. While the minor is not a requirement for admission to the PSU Graduate School of Education, Special Education Program (SPED), it does include all the prerequisites and highly recommended courses for admission to the program. Students seeking a license for teaching special education must complete a graduate-level program. The Graduate School of Education recommends students for teacher licensure at the completion of the Special Education Program.

Credits

Core Courses

Mth 211, 212, or 213 Foundations of Elem. Education	8
SpEd 417 Careers in Special Education	4
SpEd 410 Historical & Contemporary Issues in Disability Studies.....	3
Ed 420 Intro to Education and Society	4
CI 432 Computer Applications in the Classroom ..	3
Psy 311U Human Development.....	4
SpEd 418 Survey of the Exceptional Learner	3
SpEd 460/UnSt 421 Outdoor Education/ Recreation With Persons with Disabilities	6
Elective (choose one class):	2-4
CFS 491 Conceptual Foundations in Child and Family Studies	
G 355 Geosciences for Elementary Educators	
Psy 460 Child Psychology	
Psy 461U Psych. Of Adolescence and Early Maturity	
Psy 340 Principles of Behavior Analysis	
Sci 311U Teaching Everyday Science	
SpEd 455 Working with LEP Children w/ Special Needs	
SpHr 365 Survey of Speech, Language, and Hearing Disorders	
SpHr 372 Speech and Language Development in Children	
Total	37-39*

* The total may vary depending on the transfer of community college equivalent courses which carry, in some cases, fewer credits. A minimum of 18 credits must be upper-division. Only grades of C- or above may be counted toward these requirements. Students must take all coursework for differentiated grades. At least 16 credits must be in residence at PSU. A minimum cumulative GPA of 2.5 in coursework is required.

INDIGENOUS NATIONS STUDIES MINOR

Indigenous Nations Studies (INS) 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 INS 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 Cornel Pewewardy at cornelp@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 366 Meso 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 Indians of the Pacific Northwest	
Hst 467 Readings in Native American History	
NAS 301 Introduction to Native American Languages	
NAS 417 Language Maintenance and Revitalization	
Psy 410 Native American Psychological Thought and Values	
Psy 410 Native American Psychological Healing	
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 301 Introduction to Native American Languages (4)
General introduction to the linguistic and cultural background of endangered native languages of North America. Topics include structure of native languages; relationship of language to other aspects of culture such as worldview, social organization, and story telling; history of language change and current tribal projects to revitalize native languages.

NAS 404 Cooperative Education/Internship (Credit to be arranged.)
Prerequisites: NAS 201, and 8 upper-division credits in NAS or courses approved by adviser.

NAS 417 Language Maintenance and Revitalization (4)
General introduction to endangered language revitalization, with a focus on native languages of the Pacific Northwest. Topics include history of attempts to eradicate native languages and the effects; theoretical basis for revitalization; emerging tribal policies; and relations between linguists and native communities.

Certificates

Specialized academic certificates are offered by several units in the College of Liberal Arts and Sciences: Applied Linguistics/ TESL, Chicano/Latino Studies, World Languages/Teaching Japanese, International Studies, and postbaccalaureate certificates in Black Studies and Women, Gender, and Sexuality 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.

High School College programs

503-725-3430
Sally Hudson, Director
Joy Beckett, LINK Coordinator
Challenge Program

The Challenge Program is a cooperative program between Portland State University and metropolitan area high schools. It provides eligible high school juniors and seniors an opportunity to take regular college courses on their own campuses.

Students who have a cumulative grade point average of 3.00 and have met course prerequisites are eligible to enroll in

Challenge courses offered in their high school (limit of two courses; students may petition to take three).

The Challenge Program currently offers introductory college courses in English, Spanish, History, Mathematics, and Computer Science. 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.

More information is available at <http://www.pdx.edu/challenge-link>.

LINK Young Scholars Program

The Leap Into New Knowledge (LINK) Program provides a scholarship and support for selected gifted high school students to attend the University for part-time advanced study. The program is designed to serve those students who have exhausted all coursework in a particular discipline at their high schools and who have the maturity to navigate independently on a large college campus. To qualify for the program, students must be recommended to the University by their school and must successfully complete the LINK admissions process. First opportunity goes to high school seniors and those with economic need. Applications are due May 31 for the next academic year. More information and applications are available at <http://www.pdx.edu/challenge-link>.

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

In some departments, the Master of Arts in Teaching and the Master of Science in

Teaching are intended both for current middle and high school level teachers wishing to complete a graduate degree focused in their content area and for those wishing to mix content courses in a discipline with graduate work in the Graduate School of Education. The specific requirements for each discipline, and whether it is appropriate for current middle or high school level teachers, are

listed under the departments for which the M.A.T./M.S.T. option is available. (For the interdisciplinary options see page 274.)

DOCTORAL PROGRAMS

Many departments in the College of Liberal Arts and Sciences participate in one or more multi-disciplinary doctoral programs: Earth, Environment, and Society, Systems Science, and Urban Studies. They also offer the doc-

torate 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.

SRTC 118

503-725-2070

www.pdx.edu/environment

environ@pdx.edu

The School of the Environment was formally established in 2009. This School is made up of four participating departments (Environmental Science and Management, Geography, Geology, and Systems Science), associated faculty from across the university, and several affiliated groups (USGS Oregon Water Science Center, the Oregon Natural Heritage Information Center, the Institute for Natural Resources, and others). Multi-disciplinary research groups, institutes, and centers within the School support its efforts in problem-based research. The School of the Environment administers the Earth, Environment, & Society doctoral program, the Systems Science doctoral program, and the Systems Science masters program. For more information on the composition of the School, please see www.pdx.edu/environment.

DOCTOR OF PHILOSOPHY IN EARTH, ENVIRONMENT & SOCIETY

The Earth, Environment, & Society (EES) doctoral program provides an opportunity for the student to engage in relevant research while acquiring advanced academic training in Environmental Science and Management, Geography, or Geology. One of the goals of the program is to provide a broadly based understanding of one of the above the fields coupled with scientific training in one or more specialty areas. The student will follow a program of study and research approved by the EES program. The graduating student will be awarded a degree in Earth, Environment, & Society.

Admission requirements

Applicants for admission to the EES doctoral program normally will be expected to have completed a Bachelor's or Master's degree in a related field that will have prepared them to become engaged in state-of-the-art research. A list of individual faculty research expertise and research groups is avail-

able on the School of the Environment website <http://www.pdx.edu/environment>.

Degree requirements

In addition to the requirements listed above, each student must complete the following:

At least 81 credits past the bachelor's degree and the following specific courses:

Course requirements	Credits
ESR 630	3
Soc 694	4
ESR 655	1
ESR 656	1
ESR 657	1
ESR 507/607 level seminars (six terms).....	6
	16
Departmental Dissertation (minimum).....	27
	43

In addition to the above general requirements, each student will be required to complete that coursework necessary to indicate competence in environmental science and management at the graduate level. These courses will be recommended by the student's Dissertation Committee and approved by the director of the School of the Environment.

- **Other requirements.** Prior to advancement to candidacy, a student must take an Advisory Committee-approved course in statistics such as ESM 566, ESM 567, G 523, or GEOG 597. A student must also take one term of an Advisory Committee-approved environmental sociology course.
- **Dissertation.** The student must submit a prospectus outlining a proposed research project suitable for the doctoral dissertation in Earth, Environment, & Society. This is done under the guidance of the student's adviser and is approved by the Dissertation Committee and the Director of the School of the Environment. 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.

DOCTOR OF PHILOSOPHY IN SYSTEMS SCIENCE

There are two options for the Ph.D. in systems science.

Core option: Strong emphasis on systems ideas and methods. Topics include systems thinking, : system structure and dynamics, data modeling, computer simulation, networks, ; complex adaptive systems, decision analysis, and optimization. Subjects areas include environmental systems, sustainability, energy, health policy, biomedical data analysis, and other topics where systems ideas or methods make unique contributions to knowledge. (see Program documents on web for more information).

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 has historically been available in some of departments in the College of Liberal Arts and Sciences, and in the School of Business Administration.

For both of the above options, the student's program of study is tailored to his or her specific needs and interests.

MASTER OF SCIENCE IN SYSTEMS SCIENCE

Students choose a combination of systems science courses plus approved courses in associated disciplines. Topics and subject areas are the same as those for the PhD program. Students learn a wide variety of systems ideas, use them for modeling and analysis in conjunction with ideas and methods from other disciplines, and gain expertise in problem solving and integrative thinking.

GRADUATE CERTIFICATES

The Systems Science program offers graduate certificates in two specialty areas: computational intelligence (a certificate currently under revision) and computer modeling and simulation. Please see the Graduate Studies section on for graduate certificate requirements.

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. GRE 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 a baccalaureate and/or master's degree should have a combined GRE score of at least 1150 (quantitative plus verbal) taken within the last five years. For applicants to the SYSC: SBA departmental option, a GMAT score of at least 600 may be submitted instead of a GRE score. 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 seeks evidence of demonstrated intellectual capacity, undergraduate and/or graduate training in one or more appropriate disciplines, adequate preparation in mathematics and the potential to pursue advanced study and research for the Ph.D. Undergraduate GPA requirement is 3.0, and graduate GPA requirement, if applicable, is 3.25.

In addition to transcripts and test scores, the application requires three letters of recom-

mendation, and a statement of personal goals. The following are recommended technical background for the program (but not prerequisites for admission): calculus up to and including simple ODEs, statistics, including introductory multivariate, and programming and linear algebra at introductory levels.

Students are admitted to the program in Fall Term. Application materials are available online at www.pdx.edu/sysc. 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 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 Graduate 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. A discussion of general requirements for master's degrees is on page 65. In addition, 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 510-599 or SySc 610-699. Up to 3 credits of SySc 507 (with a Pass grade) may be included to satisfy the 45 credit hour 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 (one of whom must be a Systems Science core faculty), and pass an oral thesis defense.

Non-Thesis option: An additional 21 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. The comprehensive exam requirement is to be successfully completed within 5 years of admission to the master's program. 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.

Doctor of Philosophy in systems science.

A discussion of general requirements for doctoral degrees is on page 68. 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 mathematical terms than SySc 513 and 514. 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, or approved 510 courses.

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 systems component. Design of the student's comprehensive exam and anticipated dissertation research should guide course selection.

Courses taken to satisfy the systems component 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. At some point during their study all PSU doctoral students must meet a doctoral residency requirement consisting of registering full-time (at least 9-credit hours) for three consecutive quarters.

Language requirement. Foreign language competency may be required of departmental option students in some departments. (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 can 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 three distinct areas representing at least 48 course credit hours, with each area including a minimum of 15 course credit hours. See the Systems Science Graduate Program Supplemental Rules for more details (available on the web).

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 Graduate Program Supplemental Rules," and should be obtained by visiting our Web site: www.pdx.edu/sysc or contacting the Systems Science Graduate Program.

Courses

ESR 407/507

Seminar (Credit to be arranged.)

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 Science Seminar for Ph.D. students. Consent of instructor. Pass/no pass only.

ESR 610

Selected Topics (Credit to be arranged.)

ESR 630

Introduction to Transdisciplinary Modes of Critical Inquiry and Science in Environmental Research (3)

This course draws on representatives from research groups in the School to present the many ways to formulate questions and different forms of science that are being actively used to address environmental problems. We will explore curiosity- and problem-based approaches from social, physical and biological sciences. Prerequisites: PhD student or MS with permission of instructor.

ESR 655

Science Communication (1)

Students will outline the objectives involved in presenting scientific information to different audiences, including the role of the speaker, visual presentation of data, written and mixed media. This is the same course as ESM 555 and may be taken only once for credit.

ESR 656

Advanced Communication Skills for Doctoral Students (1)

Students will explore more advanced topics on presentation and proposal preparation. All students will prepare a mocked up poster based on cognitive and graphic design principles. They will create an extended outline for a research proposal. Peers in class will critique posters and proposals.

This is the same course as ESM 556 and may be taken only once for credit.

ESR 657

Science, Media and the Public: Working with the Media to Create Effective Scientific Messages (1)

Scientists need to explain their studies to the public through mass media. Topics include; audience, different media, the reporters' process, editor's view of science stories, and how inaccuracies get perpetuated. Students will evaluate a wide variety of mass media materials, interview practice, and guests' description of various media. This is the same course as ESM 557 and may be taken only once for credit.

SYSTEMS SCIENCE

SySc 330

Models in Science (4)

This interdisciplinary course focuses on the role of models in scientific inquiry. Explores how scientists from a variety of disciplines use different types of models, including physical (scale), mathematical (analytic and numeric), agent-based, animal, and network. The course has three stages of inquiry: definition, analysis, and synthesis.

SySc 346

Exploring Complexity in Science and Technology (4)

Introduction to Complex Systems, an interdisciplinary field that studies how collections of simple entities organize themselves to produce complex behavior, use information, and adapt and learn. Focus on common principles underlying complexity in science and technology, and includes ideas from physics, biology, the social sciences, and computer science. This course is the same as CS 346; the course may be taken only once for credit.

SySc 350

Indigenous and Systems

Perspectives on Sustainability (4)

Explores sustainability by drawing upon the field of Systems Science and the perspectives of traditional and contemporary indigenous peoples and scholars. Dialogue-oriented format and small group exercises promote a cooperative, student-driven learning environment. Course work calls upon students to apply their developing understanding of sustainability to their own lives.

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 510/610

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 simulation; 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**Dynamic Systems I (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**Information Theory (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.

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 anal-

ysis 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.

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, and other systems-theoretic approaches to cooperation, competition and conflict.

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 ETM 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.)

Anthropology

141 Cramer Hall
503-725-3081
www.anthropology.pdx.edu

B.A., B.S.
Minor in Anthropology
Secondary Education Program—
Social Science
M.A., M.S.

Anthropologists study human biological and cultural diversity through time and space and the interplay between culture and biology. The discipline encompasses our closest relatives and the human experience from our earliest known bipedal ancestors to the modern world, from the smallest human groups to empires and multinational corporations. Anthropologists deal with prehistoric, historic, and contemporary peoples and with such topics as human evolution, subsistence and settlement systems, family, urban development, transnationalism, globalization, social conflict, gender, symbolic systems, and human ecology. Anthropologists apply the knowledge gained from diverse theoretical perspectives to practical human problems in settings such as health care, educational development, and natural and cultural resource management, among others. As scholars, we are committed to the highest quality teaching in the classroom and the field; to ongoing research both in Portland and abroad; and to active engagement in wider university and community programs.

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 biological 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 South, Southeast, or East Asia, Latin America, and the Pacific Northwest. Finally, the major provides the necessary general anthropological back-

ground for those interested in graduate study in the discipline.

Undergraduate program

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 for more information.

Limitations. Students majoring in anthropology should consult 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 consultation 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 Biological Anthropology	4
Anth 102 Introduction to Archaeology	4
Anth 103 Introduction to Social/Cultural Anthropology	4
Anth 304 Social Theory or	4
Anth 305 Cultural Theory	4
Anth 350 Archaeological Method and Theory	4
Anth 372 Human Variability (4) or	4-5
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

†Students earning the B.S. are required to take Stat 244

NOTE: Anthropology B.A. majors 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, socio-cultural, or archaeology) and include at least one methods course (i.e., 412, 415, 452, 453, 454, 455, 477, 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 232, 233 or Stat 244, World 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 Biological 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)	4
Anth 305 Culture Theory (4)	4
Anth 350 Archaeological Method and Theory (4)	4
Anth 372 Human Variability (4) or	4
Anth 370 Paleoanthropology (5)	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).

Graduate programs

The Department of Anthropology offers the degrees of Master of Arts and Master of Science. The program is designed to give the student a graduate level of competence in general anthropology, including the major subfields of biological 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. Interested students are urged to go to the Department's Web site: www.anthropology.pdx.edu.

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, the applicant 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

* Students may substitute an additional elective course for one of the core courses, with the approval of their adviser.

[†] 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.

Applied/Policy track. Of the 52 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 504 (internship)	4
Anth 520 (policy paper)	4
Total	52

* Students may substitute an additional elective course for one of the core courses, with the approval of their adviser.

[†] 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.

Four 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 four-year limitation.

In addition to formal course requirements, the following are also necessary:

1. Candidates for an MA degree must fulfill the second language requirement. Options for meeting the graduate foreign language requirement for MA students include: A) Passing a course equivalent to PSU level 203 or higher. The Department of World Languages and Literatures will verify completion of the requirement upon evaluation of the student's academic record. B) Students who do not meet the course equivalent should contact the Department

of World Languages and Literatures during the first term after their admission to schedule an oral proficiency interview or a written test. 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. Foreign Language Requirement Verification Request Forms should be submitted for completion to the Department of World Languages and Literatures and a copy should be given to the Anthropology Department.

2. Candidates for an MS degree are strongly encouraged to discuss with their advisors the selection of appropriate courses in science, math, and technical skills that would complement their course of study.
3. Advancement to candidacy involves successful passing (a minimum grade of B-) of the core seminars (Anth 511, 550, 570). Advancement to candidacy can only be accomplished before the close of the next-to-the-final term of work.
4. Approval of a thesis topic or internship and the appointment of the graduate committee. The student develops a thesis or policy paper proposal and submits it to the department faculty for approval and for the formal appointment of the graduate committee. Students should have a master's thesis or policy paper 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.
5. Presentation and approval of thesis or policy paper.
6. Passing of an oral defense of thesis or policy paper.

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)**

Examines social organization at various levels, from the family on up to the global economy. Theoretical perspectives span classic social theory, the ethnographic tradition, and hybrid approaches used by present-day anthropologists. Topics include power, identity, agency, social change, and globalization, with an emphasis on understanding contemporary social issues in cross-cultural perspective. Designed for anthropology majors and minors. Note: This course is not approved for distribution credits. Expected preparation: 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.

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 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 Maldives Islands. Topics include cultural diversity, religious traditions, the caste system, class and gender hierarchies, and social change.

Anth 318*Asian American Experience (4)**

Explores the contemporary experiences of Asian immigrants to the United States, focusing on issues of migration, family adjustments, community formations, and identity constructions among diverse groups of Asians including Chinese, Japanese, Korean, Filipino, Vietnamese, South Asians, and others. Recommended: Anth 103.

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 320*Native Americans of the Northwest Coast (4)**

Native Americans of the Pacific Northwest coast are among the most affluent, diverse, and complex hunting-gathering peoples in the world. This course examines the unity and diversity of these cultures from Alaska to the Oregon-California border by tracing their historical evolution and responses to contemporary problems. Topics include: subsistence economies and resource tenure, social identity, art, ceremonial and spiritual life, culture change and revitalization, and modern indigenous-state relations. Prerequisites: Anth 103, 314 or 313.

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 335*Anthropology of Space and Place (4)**

Space and place are foundational to human cognition, emotion, and experience, and yet we often take them for granted. This course examines the origins, development and contemporary variation of human senses of space, place, and environment in a variety of cultural settings around the world. Prerequisites: Anth 103.

Anth 345**Practicing Anthropology (4)**

Introduction to applied anthropology as a tool to address real world problems related to development, environment, human health, cultural resource management, conflict, and more. Includes creation of a personalized career plan which will assist in the transition from education to profession following the completion of an undergraduate degree in anthropology. Expected preparation: Anth 101, 102, 304 and 305.

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 355*Historical Archaeology and the Origins of the Modern Pacific Northwest**

Explores the origins of the modern Pacific Northwest from fur-trade/indigenous contacts to the present using theories and methods of historical archaeology in North America and elsewhere. Topics include heritage, history, and interpretation; the archaeology of the fur trade; the industrial revolution and industrial archaeology; slavery and inequality; and military sites archaeology. Prerequisites: 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 363*Egyptian Archaeology: From Earliest Peoples to the Pyramid Age (4)**

A survey of the archaeological record of Egypt beginning with the earliest evidence of human occupation to the Pyramid era, with an emphasis on the period from 6000 BCE to the end of the Old Kingdom period (ca 2000 BCE). Lectures and readings will focus on how archaeological

materials are used to reconstruct events in Egypt's past.

***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 370 and Anth 372 are offered in alternating years

†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 370 and Anth 372 are offered in alternating years

***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 379

Practicing Forensic Science (4)

Survey of topics in forensic science: DNA, drug chemistry, toxicology, firearms, and latent prints. Focus on forensic anthropology and taphonomy, including assessment of age, sex, population-based skeletal variation, and effects of peri-/post-mortem environmental processes on forensic investigation. Course clarifies popular media misinformation with fact-based overview of real forensic analysis.

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)

Examines theories, methods, and ethical considerations required to conduct applied anthropology in a variety of contexts. Students will carry out independent research on a real world problem linked with his/her career goal. Prerequisites: Anth 304 or Anth 305.

***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 418/518**

Environmental Anthropology (4)

What can anthropology teach us about contemporary environmental problems? Emphasizing key issues of environmental change, adaptation, conservation and sustainability, biocultural diversity, resilience, political ecology, and environmental justice, this course examines how the cross-cultural study of human-environmental relations can improve our understanding of contemporary environmental problems and their solutions. Prerequisites: Anth 102, 103, 301 or 304, 414/514.

***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-structuralism. 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 435/535*Visual Anthropology (4)**

Examination of visual representation and visual research in Sociocultural Anthropology with a focus on photographic images, ethnographic films, and mass media. Recommended prerequisite: 8 credits of sociocultural anthropology (Anth 304, 305 strongly recommended). Upper-division standing required.

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 457/557*Hunter-Gatherers (4)**

An investigation of the economic and social diversity among modern and ancient hunter-gatherers and the theories and methods used by archaeologists to investigate and explain that diversity. Examines topics such as the evolution of hunting and gathering, hunter-gatherer settlement and mobility strategies, social complexity among hunter-gatherers and hunter-gatherers in the modern world. Recommended prerequisites: Anth 102, 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 prerequisite: 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 477/577*Primate Field Methods (4)**

Focus on methods for collecting behavioral and ecological data on free-ranging primates through a combination of field exercises and lectures. Curriculum includes development of ethograms, sampling methods and recording rules, mapping, and estimating resource availability. Students learn methods within a natural reserve setting populated by living primates. Prerequisites: Anth 101 or permission of instructor.

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 520**Policy Paper (4)**

For students completing the policy track within the department's M.A. program. Preparing a graduate level paper, 25-30 pages in length, based on the student's internship experience and the relevant policy topic they are exploring. Student meets regularly with their faculty adviser. Prerequisite: Anth 504.

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

Intensive English Language Program

Applied Linguistics
 University Center Building, Suite 335
 503-725-2040
www.pdx.edu/linguistics

B.A.
 Minor in Applied 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)

**Intensive English
 Language Program (IELP)**
 University Center Building, Suite 400
 503-725-4088
www.ielp.pdx.edu/

Applied Linguistics degree programs

The Department of Applied Linguistics is home to PSU's Intensive English Language Program (IELP) as well as several degree programs: a BA in Applied Linguistics, a minor in Applied Linguistics, a Certificate in Teaching English as a Second Language (TESL), and an M.A. in Teaching English to Speakers of Other Languages (TESOL). We also participate in the University's M.A.T. and M.S.T. degree programs. For more information about degree programs, please contact Applied Linguistics.

IELP provides English language instruction for Non-Native speakers or writers of English who wish to improve their skills in the language for academic, professional, or personal reasons. For questions about English-language instruction for Non-Native speakers or writers at any level, please contact the IELP directly. Additional information about IELP appears following the information on Applied Linguistics degree programs.

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 graduate degree prepares students to become teachers, language consultants, and researchers in the field of language learning

and teaching.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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	8
<small>(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)</small>	
Total	48

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 the adviser to select the appropriate courses and areas of concentration. Upon completion the entire program must also be approved by the 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 392 Structure of the English Language or	
Ling 411 Syntax	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.

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, particularly in non-university settings in East Asia and Latin America, as well as in limited situations in the U.S. and countries other than those mentioned above. In contrast to the M.A., TESOL, this certificate will fit into the programs of majors in a wide variety of fields, such as world languages, communication, 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 80 iBT or higher is required for proof of proficiency). The student is to be tested upon arrival.
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 392 Structure of the English Language.....	4
Ling 438 Second Language Acquisition.....	4
Ling 471 Understanding the International Experience	4
Ling 477, 478 TESOL Methods.....	8
Ling 475 Curriculum Design & Materials Development or	
One language education elective*	4
Linguistics electives (upper-division level).....	8
Total	40

* Choose from: Ling 409 Community ESL Practicum (must be taken for 4 credits), Ling 439 Language Assessment (if not taken to fulfill the above requirement), Ling 470 Grammar for TESOL, Ling 473 Computer Assisted Language Learning, Ling 472 Teaching Pronunciation, Ling 475 Curriculum Design & Materials Development (if not taken to meet the above requirement), Ling 476 Corpus Linguistics in Language Teaching, Ling 410 can only be used with prior adviser approval.

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 (P/NP) 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 the 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 the 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, where it is generally a requirement for university-level teaching.

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 valid degree (B.A.) or equivalent from an American university: a minimum TOEFL iBT score of 100 is required in order to be admitted.

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.)

Ling 390 Introduction to Linguistics or equivalent is a prerequisite to all courses except Ling 571. Students who have not taken an introductory linguistics course, should make every effort to complete Ling 390 before applying to the M.A. program or certainly before beginning classes.

Ling 392 Structure of English or passing the departmental grammar test is a graduation requirement. Students must complete this requirement as soon as possible, whether by taking and passing the grammar test the first quarter officially enrolled in the program or by taking LING 392 as early as possible.

Credits

Language Education/Applied Linguistic Theory .. 20

Required Courses

Ling 538 Second Language Acquisition
Ling 571 Understanding the International Experience

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 Teaching Foundations in Language/ Linguistic Theory 16
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 and Culminating Experience 10

Ling 559 Introduction to Graduate Study in Applied Linguistics (2)

Ling 560 Research Design (2)

Ling 561 Research Methods (2)

Additional credits as specified below for thesis, project or comprehensive exam option (6)

Total 48

All courses need to be passed with a grade of "B" or better in order for them 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 week prior to the beginning of class in the first quarter admitted 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 a teaching technique for a teaching publication. Students in the Project option must take 4 credits of Ling 507 (Seminar: Empirical Research Writing) and 2 credits of Ling 506 (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 make a final oral presentation covering the topic of their work.

Additionally, the department requires at least two years' study of a language in addition to the student's native language or an equivalent level of proficiency. For non-native speakers of English, proficiency in English as described above fulfills this requirement. For native speakers of English, two years of college-level study of an additional language as documented by a transcript fulfills this requirement. If a student has not already had two years or the equivalent of an additional language at the college level, she or he can complete this graduation requirement while working on the M.A. (though doing so will obviously lengthen the time to degree).

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.pdx.edu/linguistics, for additional information. Monthly information sessions are held for prospective students living in the Portland area. Contact the department for details.

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 (Interdisciplinary Studies), see page 274.

Intensive Program in English as a Second Language (ESL)-Ling 101-170

The Intensive English Language Program (IELP) offers courses designed to develop students' competence in listening, speaking, reading, and writing. The IELP is an inten-

sive program offered throughout the regular academic year including the summer. There are three program options: (1) for students that desire academic preparation for undergraduate studies, (2) for students that desire academic preparation for graduate studies, and (3) for students who want to learn about American culture and improve their English communication skills. There are five levels, as well as a Pre-Entry Program for students with minimal English skills. New students must take the ESL placement exams given by the program the week prior to the new term. Students placed in the Pre-Entry Program must successfully pass that program before taking courses in Levels 1-5. Full-time students in the Pre-Entry Program register for 17 credits per term. Full-time students in Levels 1-5 register for 14 credits per term. The IELP courses are divided into the following categories:

Pre-Entry Program:

- Grammar/writing (6 credits)
- Reading (5 credits)
- Speaking/Listening (3 credits)
- American Culture and Academic Life (3 credits in academic year, 2 credits summer term)

Foundational Levels (1-3):

- Grammar/Writing (6 credits)
- Reading (3 credits)
- Speaking/Listening (3 credits)
- Skills Enhancement Course (2 credits)

Academic Preparation for Undergraduate Studies, Academic Preparation for Graduate Students (Level 4):

- Advanced English Grammar (3 credits)
- Guided Research Writing (3 credits)
- Academic Reading (3 credits)
- Understanding Academic Lectures (3 credits)
- Skills Enhancement Course (2 credits)

Academic Preparation for Undergraduate Studies (Level 5):

- Grammar and Editing for Academic Writing (3 credits)
- Independent Research Writing (3 credits)
- Advanced Academic Reading (3 credits)
- Discussion Skills (3 credits) OR Public Speaking (3 credits)
- Skills Enhancement Course (2 credits)

Academic Preparation for Graduate Students (Level 5):

- Research and Writing for Graduate Students (3 credits)
- Reading Strategies for Graduate Students (3 credits)
- Oral Communication for Graduate Students (3 credits)
- Language Proficiency Test Preparation (4 credits) OR Grammar and Editing for Academic Writing (3 credits)
- Skills Enhancement Course (2 credits)

Communication and Culture (Levels 4 and 5): Students enroll in one of two sets

of courses that alternate each term. Each set of courses includes the following:
 Multimedia Listening (3 credits)
 Writing for Specific Purposes (3 credits)
 Cultural Themes in Reading (3 credits)
 Oral Communication Fluency (3 credits)
 Skills Enhancement Course (2 credits)

Students who are admitted to PSU but have not met PSU's language proficiency requirement can register as full time students in the IELP by contacting the IELP office and taking a placement test prior to their first term. PSU-admitted students can take one PSU course concurrently with Level 4 and 5 IELP classes if they meet eligibility requirements.

Students admitted to PSU without an ESL restriction may elect to take Academic Preparation courses in Levels 4 and 5. Up to 24 credits in the Academic Preparation programs can be applied towards an undergraduate degree.

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 forms will be issued. Upon arrival the student must take a placement test in English administered by the IELP. 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 in the Department of Applied Linguistics. For information and application materials, contact the IELP in the Department of Applied Linguistics..

Courses

Courses with an asterisk () are not offered every year. Courses numbered 101-170 and 450-459 are IELP courses and can be taken only by non-native speakers (or writers).*

Ling 101

Pre-Entry Program Grammar/Writing (6)
 An introduction to form, meaning and use of simple present and past verb tenses; conjunctions; subject, object, possessive, and demonstrative pronouns. Students will learn to identify parts of speech and sentences; question/answer formation; write beginning level paragraphs; understand and use the basic rules for capitalization, punctuation and spelling; practice good penmanship.

Ling 104

Pre-Entry Program Reading (5)
 An introduction to basic reading skills including phonics, basic comprehension, fluency, sequence, word analysis; finding the topic. Introduction to basic dictionary skills and extensive reading. Emphasis on building vocabulary and decoding strategies to aid in fluency and reading for basic understanding.

Ling 106

Pre-Entry Program Speaking/Listening (3)

An introduction to basic listening and speaking skills. Practice with listening to conversations and interviews; asking/answering questions; making positive and negative statements in the present tenses; describing people, places, things and activities; giving personal information, expressing wants, needs and likes. Emphasis is on pronunciation and understanding and being understood in simple conversational situations.

Ling 111

Grammar/Writing Level 1 (6)

Continued focus on sentence structure and developing basic single paragraphs (descriptive and narrative rhetorical styles) with topic, supporting, and concluding sentences. Introduction to compound and complex sentences. A continued focus on simple present and past verbs, and an introduction to form, meaning, and use of progressive and future tense, including statement and question forms; contractions; time expressions; modals; count/noncount nouns; pronouns; adjective and noun complements; demonstratives; and prepositions

Ling 114

Reading Level 1 (3)

Continued focus on basic reading skills, as well as introduction to skimming and scanning, differentiating main ideas from supporting details and examples, identifying common prefixes and suffixes, discerning meaning from context, and matching pronouns to their referents. Dictionary exercises used to practice alphabetical order, syllabification, and word stress. Continued emphasis on building vocabulary and honing skills through reading short, adapted materials

Ling 115

Writing Workshop for Non-native Writers (4)

A course designed for writers whose first language is not English to develop their skills and confidence in writing for college. This course focuses on the rhetorical structures of American College-level academic writing including essay structure, summaries, responses, and research writing. In addition, students work on grammar and sentence structure problems which occur more often in non-native writing and do peer editing and self-editing. Understanding complex assignments, synthesizing ideas, and strategies for test taking are also addressed in this course.

Ling 116

Speaking/Listening Level 1 (3)

Continued emphasis is on developing confidence, comprehensibility, and skills in basic social interactions, including participating in conversations, asking for information, and providing personal information. Practice questions, statements, and negatives in present, past, and future tenses; identify common reductions, stress, and intonation patterns; use vocabulary related to academic and everyday life; give narrative and descriptive individual presentations

Ling 121

Grammar/Writing Level 2 (6)

Focus on paragraph development and introduction to process, comparison/contrast, and classification writing as rhetorical styles; use of logical connectors; outlining ideas for essay organization; and formatting rules. Emphasis on expanding single paragraph essays into longer essays. Expanded utilization of modal auxiliaries and introduction to present perfect tense, gerunds and infinitives,

passive voice, real conditional, comparative and superlative adjectives, and adverbs.

Ling 124
Reading Level 2 (3)

Focus, in both fiction and non-fiction texts, on improving comprehension skills; locating and understanding main ideas, supporting details, and signal words; inferring meaning; and increasing reading speed. Improve dictionary skills and expand academic vocabulary knowledge including meaning, parts of speech, affixes, and word forms.

Ling 126
Speaking/Listening Level 2 (3)

Identify meaningful information from short lectures and conversations; practice with question forms in present, past, future, and present perfect tenses; conduct interviews; plan and deliver short oral presentations. Continued improvement of pronunciation skills, including stress, intonation, and reductions.

Ling 131
Grammar/Writing Level 3 (6)

Introduction to cause/effect and argumentation as rhetorical styles; practice narrowing a topic, developing more effective introductions and conclusions; use of transitions to subordinate/coordinate ideas. Emphasis on essay writing. Expanded use of gerunds and infinitives, modal auxiliaries, and adverbial clauses. Introduction to past perfect and future perfect tenses, subordinate clauses, parallel structure, and relative clauses.

Ling 134
Reading Level 3 (3)

Focus on developing critical reading skills in expanded works of fiction and non-fiction; introduction to rhetorical patterns, distinguishing fact from opinion, determining author's purpose, paraphrasing and summarizing points, and identifying elements of fiction. Expansion and use of academic vocabulary.

Ling 136
Speaking/Listening Level 3 (3)

Emphasis on taking organized notes using symbols and abbreviations, understanding main ideas and examples, and identifying lecture cues from academic lectures. Improve skills needed for focused small group discussions, impromptu speaking, and individual and group presentations using information gathered from interviews.

Ling 142
Advanced English Grammar for Non-native Speakers (3)

Focus on grammar concepts that are essential for effective academic writing. Students will apply these concepts in written activities and begin to learn self-editing techniques. Students should have a basic foundation in English grammar including the English verb tense system and simple, compound and complex sentence structures.

Ling 143
Guided Research Writing for Non-native Speakers (3)

Students produce academic research papers using sources provided by the instructor. Skills include developing ideas for writing, using transitional elements, paraphrasing and documenting sources, and developing effective thesis statements, introductions and conclusions. Analysis and synthesis of information from sources for use in writing. Students must have a basic foundation in academic writing in order to enroll in this course.

Ling 144
Academic Reading for Non-native Speakers (3)

Students improve ability to read academic texts quickly and effectively. Concepts taught include considering the author's point of view and purpose in understanding a reading, developing strategies for answering essay questions under time constraints and learning how to paraphrase, summarize and respond to readings. Students will also build their academic vocabulary during the term. Students should have a basic foundation in academic reading in order to enroll in the course.

Ling 152
Grammar and Editing for Academic Writing for Non-native Speakers (3)

Students identify and integrate the grammatical structures that can cause difficulty in writing for non-native speakers. These structures include conditionals, prepositions, and subordination, among others. Students will focus on using grammar effectively in self-editing of academic writing. Students must have a strong foundation in English grammar in order to enroll in this course.

Ling 153
Independent Research Writing for Non-native Speakers (3)

Students write a research paper based on a topic of their choosing. Focus on critical thinking skills, finding appropriate sources through library and internet searches, and synthesis of ideas from sources into a well developed, clearly organized and accurately documented paper. Students taking the course should have experience writing basic source-based essays with a thesis and documentation

Ling 154
Advanced Academic Reading for Non-native Speakers (3)

Students expand ability to efficiently and effectively read academic texts. Students lead group discussions on academic articles and continue building on academic vocabulary. Summary and response writing focuses on using critical thinking skills. Students should have a strong foundation in academic reading in order to enroll in the course.

Ling 155
Discussion Skills for Non-native Speakers (3)

Focus on communication skills within the context of small group settings. Development of effective group collaboration and communication strategies including oral expression, active listening, discussion roles, and cultural competency. Students practice skills through participation in group projects.

Ling 156
Public Speaking for Non-native Speakers (3)

Students learn techniques for developing and delivering both impromptu and prepared speeches. Emphasis will be given to developing strategies to reduce nervousness, organize ideas, produce grammatically accurate language and improve pronunciation and overall oral quality

Ling 161
Language Proficiency Test Preparation (4)

This course prepares students to take IELTS, TOEFL iBT, or the Institutional TOEFL. Students select and set goals to achieve their desired test score. Students follow a flexible, personalized study plan to improve weaknesses while enhancing overall performance. Students make use of multiple learning tools available in the IELP Learning Center, consult with trained testing tutors, and work closely with the instructor.

Ling 170
Skills Enhancement (3)

A variety of classes aimed at learning English in a variety of manners, ie. English through Drama, Pronunciation, Vocabulary Building, just to name a few. Course selection varies on a quarterly basis.

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 301
Introduction to Native American Languages (4)

General introduction to the linguistic and cultural background of endangered native languages of North America. Topics include structure of native languages; relationship of language to other aspects of culture such as worldview, social organization, and story telling; history of language change and current tribal projects to revitalize native languages.

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 391
Introduction to Applied Linguistics (4)

Survey of topics not covered in detail in Ling 390 including language acquisition, historical linguistics and discourse analysis. Different theoretical perspectives relevant for applied linguistics are introduced and students develop their analytic skills with a special focus on the effective and discipline-appropriate reporting of these analyses. Prerequisites: Ling 390.

Ling 392
Structure of the English Language (4)

A study of the basic grammar of English with an emphasis on describing grammatical forms and their functions in communication. Expected preparation or co-requisite: Ling 390

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 406/506
Project (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 411/511 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 411/511 or 413/513.

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.

***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 417/517
Maintenance and Revitalization of Endangered Languages (4)
 General introduction to endangered language revitalization, with a focus on native languages of the Pacific Northwest. Topics include history of attempts to eradicate native languages and the effects on those languages and their communities; theoretical basis for revitalization; emerging tribal policies; and relations between linguists and native communities. Recommended prerequisites: Ling 390, NAS 301 or equivalent.

***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 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 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 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 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
Theories and Practice in Applied Linguistics (4)

An examination of current areas of applied linguistics research focusing on original research and building upon concepts presented in Ling 390 and Ling 391. Prerequisites: Ling 390 and Ling 391.

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; 477/577.

***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 433/533.

Ling 453
Graduate Preparation: Research and Writing for Non-Native Speakers (3)

Students refine their academic writing skills through research and citation. The course also focuses on recognizing and producing vocabulary and grammar appropriate to graduate-level writing. Prerequisites: upper-division standing and IELP program approval.

Ling 454
Graduate Preparation: Reading Strategies for Non-Native Speakers (3)

In this hybrid course, students explore readings in their individual disciplines and develop a portfolio of academic skills and strategies to prepare for graduate-level reading. Students utilize technology to organize and manage readings, cite sources, and expand academic vocabulary. Prerequisites: upper-division standing and IELP program approval.

Ling 455
Graduate Preparation: Oral Communication for Non-Native Speakers (3)

Students prepare for the demands of graduate-level coursework by activating their skills through public speaking and group discussion. Emphasis is also on expanding interpersonal language skills and cross-cultural skills in an academic environment. Prerequisites: upper-division standing and IELP program approval.

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 472/572**Teaching Pronunciation (4)**

This is a practical, hands-on course in which students apply phonetics and phonology in the context of language education. While the focus is on teaching English pronunciation, the course includes general theory and applications that are useful for students planning to teach pronunciation of other languages (e.g., Spanish, Chinese). Prerequisites: Ling 390.

Ling 473/573**Computer Assisted Language Learning (4)**

Introduction to the use of computers in language learning. Examines the research of the field to inform practical considerations for task design and evaluation. Prerequisites: Ling 477/577.

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 477/577 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 477/577 or instructor's approval. Recommended: Ling 478/578 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. Prerequisites: Ling 471/571, 438/538. Ling 478/578: Emphasizes techniques for teaching and classroom management. Prerequisite: Ling 477/577.

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 232 or 390.

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 590 may not be counted toward MA TESOL degree.

Ling 503**Thesis (Credit to be arranged.)****Ling 559****Introduction to Graduate Study in Applied Linguistics (2)**

Serves as an introduction to graduate study in applied linguistics with an emphasis on critical reading, writing, and research skills needed for success in the M.A. TESOL program.

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 a research proposal. Prerequisite: admission to the M.A. TESOL program and at least 16 graduate credits in applied linguistics including Ling 559.

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 Research and Teaching Center (SRTC) 503-725-8757

www.pdx.edu/biology/

B.A., B.S.

Minor

Secondary Education Program

M.A., M.S.

M.A.T. and M.S.T. (Science/Biology)

Ph.D.—Biology

Undergraduate programs

The biology program is designed to prepare

students for careers in biological research, development, teaching, and in health sciences, nursing, biotechnology, conservation biology and wildlife management, forestry, and other applied fields. It also provides the necessary background 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 pre-professional 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.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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 track may obtain information on that in the Biology Dept. 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 334 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 330 Introduction to Plant Biology
Bi 433 Morphology of Vascular Plants
Bi 435 Plant Systematics
Bi 441 Plant Physiology
Bi 471 Plant Ecology
ESM 473 Phytoplankton Ecology

Zoology

Bi 387 Vertebrate Zoology
Bi 413 Herpetology
Bi 414 Ornithology
Bi 415 Mammalogy
Bi 416 Marine Mammals
Bi 461 Invertebrate Zoology

Microbiology

Bi 421 Virology
Bi 430 Theory of Recombinant DNA Techniques
Bi 480, 488 Microbiology and Techniques

Evolutionary biology

Bi 358 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 358 Evolution	4
Upper-division electives.....	28

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 (5)
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)
Bi 461 Invertebrate Zoology (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 450 Phylogenetic Biology (4)
Bi 471 Plant Ecology (4)
Bi 472 Natural History (3)
Bi 476 Population Biology (4)
ESM 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 334 Molecular Biology.....	4
Bi 336 Cell Biology	5
Bi 337 Cell Biology Lab.....	2
Bi 341 Genetics.....	4
Bi 358 Evolution	4

Bi 480, 488 Microbiology and Techniques..... 6
Upper-division electives (must include at least 12 credits from the following list)..... 20

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 486 Pathogenic Bacteriology
Bi 487 Immunology
Bi 450 Phylogenetic Biology
Selected Bi 410/510 courses with advisor approval.

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 IV: Botany

	Credits
Bi 251-253 Principles of Biology.....	15
Bi 341 Genetics.....	4
At least two of the following courses:	
Bi 334 Molecular Biology	4
Bi 336 Cell Biology	5
Bi 357 Ecology	4
Upper-division biology electives.....	32-33

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 330 Introduction to Plant Biology
Bi 434 Plant Anatomy
Bi 441 Plant Physiology
ESM 473 Phytoplankton Ecology

Evolution and systematics

Bi 358 Evolution
Bi 432 Plant Diversity and Evolution
Bi 435 Plant Systematics
Bi 450 Phylogenetic Biology
Bi 476 Population Biology

Ecology

Bi 471 Plant Ecology
ESM 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.....	
12-15	

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 330 Introduction to Plant Biology
 Bi 387 Vertebrate Zoology
 Bi 433 Morphology of Vascular Plants
 Bi 434 Plant Anatomy
 Bi 455 Histology
 Bi 461 Invertebrate Zoology

Area III: Ecology and Evolutionary Biology

Bi 357 General Ecology
 Bi 358 Evolution
 Bi 360, 361 Introduction to Marine Biology and Laboratory
 Bi 423 Microbial Ecology

Total 27-30

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: S. Eppley

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 Psy 311.

Biology majors. The student must complete a biology major's program as outlined above, to include a course each in microbiology, ecology, genetics, cell biology, 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	104

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 358 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 degrees leading to the Master of Arts or Master of Science, and the Master of Arts in Teaching or Master in Teaching Science/Biology. The department also offers an advanced Ph.D. degree in biology. The latter specialized degree is attained through the successful completion of requirements as

stipulated by the department and the student's research committee (see below).

Admission requirements

In addition to the instructions for admission to the graduate program as they appear on page 65, the department requires the following information from each applicant to the M.A., M.S., M.S.T., or Ph.D. program in biology:

1. Satisfactory scores on the general Graduate Record Examination (GRE).
2. Two letters of evaluation from persons qualified to assess the applicant's promise as a graduate student.
3. The student should also submit an application directly to the Biology department using the online form found on the department's website.

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 that must be taken into consideration, including the availability of appropriate advisers, research space, and departmental resources.

Degree requirements

University master's degree requirements are listed on page 65. Specific departmental requirements are listed below. All M.S., M.S.T., M.A.T. and Ph.D. 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 required for a master's degree. Students must complete Bi 598 Graduate Research Prospectus, and Bi 599 Graduate Grant Writing in the fall and winter quarters following admission to the program. 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 12 credits may be in Bi 501 and Bi 505 Reading and Conference. No more than a total of 9 credits may be in Bi 507 Seminar. A maximum of 12 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. Full time students must complete their degree within 4 years of entry into the program.

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. Students must complete Bi 598 Graduate Research Prospectus, and Bi 599 Graduate Grant Writing in the fall and winter quarters following admission to the program. 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 student's 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 129 for the required education courses.

Doctor of Philosophy. Prospective Ph.D. students are required to take Bi 698 Graduate Research Prospectus, Bi 699 Graduate Grant Writing, and Bi 520 Ethical Practice in the Life Sciences in the fall, winter, and spring quarters following admission to the program. Students must also complete 12 credits of Bi 607 Seminar, 27 credits of Bi 603 Dissertation, and 33 credits of coursework at the 500/600 level and above.

The student must also have taken a departmental comprehensive exam by the fifth quarter after entering the program, followed the next quarter by a formal defense of their Ph.D. prospectus. Successful completion of the degree is contingent on the completion of original research, and presentation of results in a public oral defense and produc-

tion of a formal dissertation that is submitted to and approved by the student's research committee and the University's Office of Graduate Studies. Students must complete their degree within seven years of entry into the program.

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 non-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 201

Fundamentals of Biology: Cells, Genes, and Heredity (3)

An overview of basic concepts of biology and applications to everyday life. Topics include the material basis of living systems; cell and molecular structures and interactions, and genetics and heredity, as applied to issues such as cancer, nutrition, reproductive and genetic testing, and biotechnology. Fulfills the science requirement for non-majors. This course will not fulfill biology major requirements or pre-allied health requirements for introductory biology.

Bi 202

Fundamentals of Biology: Ecology, Conservation, and Health (3)

A fundamental introduction to the biological concepts and principles underlying the relationships among ecology, conservation, sustainability, and public health. Topics include ecological principles, population ecology, and public health. These will translate into a better scientific understanding of ecology and health. Fulfills the science requirements for non-majors. This course will not fulfill biology major requirements or pre-allied health requirements for introductory biology.

Bi 203

Fundamentals of Biology: Evolution and Diversity of Life (3)

An introduction to fundamental principles of evolution, origins, and diversity of life on Earth.

Topics include history, development, mechanisms and processes of evolution, patterns of ancestry, diversity and extinction, and surveys of the major life forms including the origin and evolution of modern humans. Fulfills the science requirement for non-majors. This course will not fulfill biology major requirements or pre-allied health requirements for introductory biology.

Bi 204

Fundamentals of Biology Laboratory (1)

A laboratory course to accompany Bi 201 Fundamentals of Biology. Hands-on inquiry and investigations of topics relating to the material basis of living systems; cell and molecular structures and interactions, and genetics and heredity. Fulfills the university laboratory science requirement.

Bi 205

Fundamentals of Biology Laboratory (1)

A laboratory course to accompany Bi 202 Fundamentals of Biology. Hands-on inquiry and investigations of topics relating to ecological systems, conservation biology, and human public health. Fulfills the university laboratory science requirement. Expected preparation: high school biology.

Bi 206

Fundamentals of Biology Laboratory (1)

A laboratory course to accompany Bi 203 Fundamentals of Biology. Hands-on inquiry and investigations of topics relating to the major groups of organisms. Fulfills the university laboratory science requirement.

Bi 207, 208, 209

Biology for Allied Health I, II, III (4, 4, 4)

Three-term preparatory biology lecture and integrated lab course for students preparing for allied health career tracks. Bi 207: Cell, Molecular and Genetics: topics include cell structure and function, molecular basis of life, cellular basis of reproduction, heredity and genetics. Bi 208: Evolution and Diversity of Life: topics include origin and evolution of diversity of life from viruses and microbes to vertebrates; animal behavior, organismal interactions. Bi 209: Anatomy and Physiology Systems: topics include skeletal, circulatory, respiratory, digestive, urinary, endocrine, nervous, immunological, reproductive systems; organization, development, and homeostasis in animals. Integrated lab exercises emphasize the process of scientific inquiry using critical thinking and communication skills.

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

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 proce-

dures for study of microorganisms in the laboratory and field. Two 2-hour laboratory periods.

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 334

Molecular Biology (4)

The principles, concepts and methods of molecular biology focusing on structure, biochemistry, biosynthesis and regulation of cellular macromolecules-DNA, RNA and proteins. Topics covered include the nature, structure, regulation and expression of genes, molecular aspects and regulation of translation, DNA replication and repair, mutagenesis, and an introduction to molecular techniques. Prerequisites: BI 251 and CH 223.

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. Prerequisites: BI 334.

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 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 358**Evolution (4)**

Examination of processes underlying evolutionary change and patterns of biodiversity generated by these processes. Introduction to elementary population genetics, quantitative genetics, and phylogenetics. Emphasizes methods of reasoning and experimentation used in evolutionary research. Prerequisites: Bi 251, 252, 253.

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 372**Nanotechnology, Society and Sustainability (4)**

Introduction to ethical, legal, and social issues associated with nanotechnology. Critically evaluates implications and applications of nanotechnology to environmental and human health concerns, in local and global contexts. Addresses nanotechnology's impact on the economic, environmental, and social aspects of sustainability.

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, one 3-hour laboratory. 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, two 3-hour laboratories. Expected preparation: upper-division physiology course. Prerequisites: Bi 387 or Bi 415.

Bi 417/517**Mammalian Physiology (4)**

Physiology of the mammalian cardiovascular, respiratory, renal and digestive systems with emphasis on homeostatic control and integration 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 bac-

terial, plant, and animal viruses, and the medical aspects of important human viruses. Recommended prerequisite: Bi 334.

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. Prerequisites: Bi 334 and Bi 336.

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 334.

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. Prerequisites: Bi 341 and Bi 358.

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. Prerequisites: 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, 358, 387.

Bi 430/530**Theory of Recombinant DNA Techniques (4)**

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. Prerequisites: Bi 334.

Bi 431/531**Recombinant DNA Techniques Laboratory (2)**

Laboratory of recombinant DNA and molecular cloning techniques. Corequisite: Bi 430/530. Prerequisites: Bi 235 or Bi 337.

Bi 432/532*Plant Diversity and Evolution (5)**

Study of the morphology, structure, and life history of green algae, bryophytes, and vascular plants from an evolutionary point of view. Two 2-hour lectures and one 3-hour laboratory. Prerequisites: Bi 251, 252, 253. Expected preparation: Bi 341 and Bi 358.

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 330.

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 330.

**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 330.

**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 358, 424.

**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. Prerequisites: Bi 336 and 341.

***Bi 461/561
Invertebrate Zoology (6)**

A survey of invertebrate animal diversity, with a focus on species of the Pacific Northwest. Emphasis on evolution of adaptations in anatomy, physiology, and behavior. Two 2-hour lectures, one 3-hour laboratory, with some field trips outside of class time. Recommended prerequisite: one year of introductory biology.

**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. Prerequisites: Bi 357.

***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. Prerequisites: 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. Prerequisites: Bi 334 and 336.

***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 Techniques (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. Prerequisites: Bi 235, or Bi 337, or Bi 431/531, or consent of instructor.

**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 520
Ethical Practice in the Life Sciences (3)**
Addresses issues pertaining to the ethical and responsible conduct of scientific research, including role of research in society; biosafety; human and animal subjects and welfare; funding, conflict of interest, and intellectual property; publication and peer review; and fraud, bias and misconduct. Satisfies NSF and NIH requirements for research ethics training. Open to graduate students in Biology, Chemistry, and Environmental Sciences. Post-bac students not currently enrolled in a graduate program may take this course with departmental approval.

**Bi 526
Principles of Evolution (4)**

Lectures and discussions on advanced topics in evolutionary biology; evaluation of historical and current trends in this field. Recommended prerequisite: Bi 358 or equivalent.

***Bi 543/643
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 585/685
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 590/690
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 592/692
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 595/695
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 596/696
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 358.

***Bi 597/697
Advanced Topics in Mammalogy (3)**
Study of one or more advanced topics in mammalogy.

Bi 598/698**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 599/699**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
Dissertation (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.)****150 Extended Studies Building
503-725-3472**www.pdx.edu/blackstudies

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.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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.

Core courses

	Credits
BST 202 Introduction to Black Studies.....	4
Lower Division Black Studies courses	12
Upper Division electives in Black Studies selected in consultation with major adviser and spread over the geographic and thematic specializations of Africa; African-American (USA), Caribbean/Latin America.....	32
Adviser approved non-Black Studies Upper Division electives	12
Total	60

- A maximum of 16 lower division credits in Black Studies may be applied to the major
- Of the 32 upper division Black Studies electives a minimum of 4 credits must be taken from each of the three areas of specialization within the department: Africa, African-American (USA), Caribbean/Latin America
- Of the upper division Black Studies electives a minimum of 24 credits must be taken under the graded option
- Upper division Black Studies courses may be substituted for some or all of the non-black studies electives requirement

with Adviser approval

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 12Total 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	
BSt 440 Caribbean Studies	
BSt 470 African Art	
BSt 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

150 Extended Studies Building 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.*

BSSt 199

Special Studies (Credit to be arranged.)

BSSt 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.

*BSSt 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.

*BSSt 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.

BSSt 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 constructed categories. Focus on how the intersections of identities function at the individual, societal, and structural levels.

BSSt 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.

BSSt 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.

*BSSt 221

Introduction to African American Literature (4)

An overview of African American fiction, poetry, drama, and expository prose.

*BSSt 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.

BSSt 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.

BSSt 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: BSSt 211.

BSSt 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 period, independence and post-independence. This course is the same as Hst 313; course may be taken only once for credit. Prerequisite: BSSt 211.

BSSt 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: BSSt 211 or Sophomore Inquiry.

BSSt 325

Race and Ethnicity in Latin America (4)

Focus on the experiences of people of African descent in Latin America through the theoretical and empirical research on race and ethnicity in the region. Topics include regional and national variations concerning racial and ethnic identity and the intersection of race/ethnicity, gender and social class. Also explores how Blackness is con-

tested in the media including literature and popular culture.

BSSt 326

Cuba, Dominican Republic, Puerto Rico (4)
History, culture, politics and contemporary societies of the people of the Spanish-speaking Caribbean – Cuba, the Dominican Republic and Puerto Rico.

BSSt 335

The Multi-Racial Experience (4)
Explores what it means to identify oneself or be identified as multiracial/ethnic. Considers how social class, gender, race and other factors shape the multiracial experience. In addition, explores interracial relationship and the representation of multiracials in the media.

BSSt 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.

***BSSt 351, 352**

African American Literature (4, 4)
A study of African American literature from its oral and folk beginnings to the present. Same course as Eng 351 and Eng 352 and may be taken only once for credit. Recommended prerequisite: BSSt 221 or Eng 256.

BSSt 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.

***BSSt 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.

BSSt 399

Special Studies (Credit to be arranged.)

BSSt 401

Research (Credit to be arranged.)
Consent of instructor.

BSSt 404

Cooperative Education/internship (Credit to be arranged.)

BSSt 405

Reading and Conference (Credit to be arranged.)
Consent of instructor.

BSSt 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, multi-

cultural environments in which to learn and serve international communities. Students will be asked to apply for admission to the overseas programs focused in the Caribbean and Africa.

BSSt 407/507

Seminar (Credit to be arranged.)
Consent of instructor.

BSSt 408

Workshop (Credit to be arranged.)
Consent of instructor.

BSSt 409

Practicum (Credit to be arranged.)
Consent of instructor.

BSSt 410

Selected Topics (Credit to be arranged.)
Consent of instructor.

***BSSt 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.

BSSt 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.

***BSSt 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.

***BSSt 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.

***BSSt 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.

***BSSt 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 antislavery, suffrage, club, civil rights, nationalist, black feminist, and current movements for social justice. Recommended prerequisite: BSSt 207.

***BSSt 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.

***BSSt 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: BSSt 221; Eng 107, 108, 253, 254.

***BSSt 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.

BSSt 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.

BSt 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.

***BSt 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: upper division standing.

BSt 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: BSt 206.

BSt 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.

***BSt 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. Prerequisite: upper division standing.

***BSt 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, BSt 211. This course is the same as ArH 470/570; course may be taken only once for credit.

BSt 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.

***BSt 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: upper division standing.

Chemistry

262 Science Building II
503-725-3811
www.pdx.edu/chem/

B.A., B.S.
Minor

Secondary Education Program
M.A., M.S., M.A.T. and M.S.T. (Science/
Chemistry)

Ph.D.—Chemistry

Ph.D.—Environmental Sciences and
Resources

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 graduate program emphasizing cutting-edge research in the chemistry of the environment, novel materials and biological systems. 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.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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 Advanced Inorganic Chemistry I or	
Ch 412 Advanced Inorganic Chemistry II.....	4
Ch 440, 441, 442, 443, 444, Physical Chemistry....	17
Approved 400-level chemistry courses	6

Total in chemistry	71
One year of physics with calculus with laboratory.....	15
Calculus through Mth 253 or equivalent.....	12
Total in other fields	27
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 440, 441 Physical Chemistry.....	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

‡ Ch 490 requires the Ch 334, 335, 336 Organic Chemistry sequence as a prerequisite.

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).

The Department of Chemistry has an approved thesis-based Honors Degree program. Interested students should consult the Chemistry website and meet with the departmental Honors adviser for details.

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 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); Ph.D. in 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 Chemistry combines original research with advanced coursework in various disciplines of chemistry. Research foci in the department are biological chemistry, materials chemistry, and environmental chemistry. Students that complete the program are prepared to pursue careers in academic, industrial, or government research.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 for more information. Students should also apply directly to the department. Contact our office or check the Web site, www.pdx.edu/chem/ for application forms and other information.

Degree requirements

University master's degree requirements are listed on page 65. 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.T./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 Chemistry. As with the M.S./M.A. programs, candidates must satisfy requirements related to entrance exams, coursework, seminar, and a thesis, as well as comprehensive examinations and a prospectus exam. The details of all requirements are outlined in the Department of Chemistry's Graduate Student 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 104 – 109 does not satisfy the first-year Chemistry requirement for most science and engineering majors and course credit will only be given for CH 221 – 223, 227 – 229 if both sequences (100 and 200-level) are taken.

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 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. Prerequisites for Ch 221: Completion of MTH 111 with a grade of C- or above, or passing at the necessary level

on the mathematics placement test (see Math Department webpage at pdx.edu/math for information). Prerequisite for Ch 222: Ch 221; for Ch 223: Ch 222.

†CH 104 – 109 does not satisfy the first-year Chemistry requirement for most science and engineering majors and course credit will only be given for CH 221 – 223, 227 – 229 if both sequences (100 and 200-level) are taken.

Ch 227, 228, 229

General Chemistry Laboratory (1, 1, 1)

Laboratory work to accompany General Chemistry (Ch 221, 222, 223). Completion of or concurrent enrollment in lecture required. 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. Prerequisites: Ch 223 and 229.

Ch 321

Quantitative Analysis Laboratory (2)

Basic quantitative analytical laboratory work including volumetric and instrumental methods. Prerequisites: Ch 320 or concurrent enrollment.

†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 and Ch 328; concurrent enrollment in the laboratory class is recommended. Prerequisites for Ch 331: Ch 223. Prerequisites for Ch 332: Ch 331.

† Ch 331, 332 duplicate to some extent Ch 334, 335, 336. No more than 12 credits will be allowed in organic chemistry lecture.

†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. Prerequisites: Ch 223. Concurrent enrollment in the laboratory course is recommended.

† Ch 331, 332 duplicate to some extent Ch 334, 335, 336. No more than 12 credits will be allowed in organic chemistry lecture.

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.

Prerequisites: Ch 337. Concurrent enrollment in the lecture course is recommended.

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. 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. Prerequisites: Ch 229 and 332 or 336.

‡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. Prerequisites: one college-level course in biology, chemistry, geology.

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 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

Advanced Inorganic Chemistry I (4)

Atomic orbitals, ionic bonding, valence bond theory, molecular orbital theory, crystal field theory, and introduction to coordination theory.

Prerequisites: Ch 223, Ph 203 or Ph 213, Mth 253. Recommended prerequisite: Ch 442.

Ch 412/512**Advanced Inorganic Chemistry II (4)**

Ligand field theory, coordination chemistry, transition metals, organometallic chemistry, acids and bases, nonaqueous solvents, and descriptive chemistry of the elements. Prerequisites: Ch 411.

Recommended prerequisites: Ch 442.

Ch 418/518*Advanced Chemistry Laboratory (4)**

Advanced techniques and their use in the preparation of compounds. One lecture; two 3-hour laboratory periods. 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.

‡ Alternate years.

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.

Prerequisites: Ch 320/321, and one year of physics. Recommended prerequisites: Ch 417 or Ch 442.

#Ch 427/527**Instrumental Analysis Laboratory (2)**

Laboratory work to accompany Ch 426/526. One 5-hour laboratory period.

#Carries graduate credit only for nonchemistry degrees.

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. Prerequisite: Ch 336.

Ch 435/535**Polymer Chemistry (4)**

Fundamentals of polymers. Topics include polymer structures, molecular weights and determination, methods of polymerization including kinetics and statistics, testing and spectroscopy characterization of polymers, polymer composites and fillers, polymer reactions. Expected preparation: Ch 336.

Ch 436/536**Spectrometric Analysis (3)**

Ultraviolet, infrared, nuclear magnetic resonance and mass spectrometry in the analysis of molecular structure. 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. Prerequisites: Ch 436/536 or concurrent enrollment.

Ch 440/540, 441/541, 442/542**Physical Chemistry (4, 4, 4)**

The study of thermodynamics, phase and chemical equilibria, solutions, electrochemistry, reaction rates and mechanisms, quantum mechanics, spectroscopy, electron transport, molecular modeling and statistical mechanics. Prerequisites: Ch 320, Ph 213, and Mth 253.

Ch 443/543**Numerical Data Analysis and Modeling in Chemistry (2)**

The study of statistical analysis of experimental data and modeling of chemical systems using modern computational resources. Prerequisites: Ch 320/321, and Ph 223 or Ph 213. Concurrent enrollment in Ch 440/540 recommended.

Ch 444/544, 445/545**Physical Chemistry Laboratory (3, 3)**

Laboratory work to accompany Ch 441/541, 442/542. One hour of lecture and one 4-hour laboratory period. Expected preparation: 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. 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.

‡ Alternate years.

‡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 442.

‡ Alternate years.

‡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.

‡ Alternate years.

Ch 486**Environmental Chemistry (4)**

Survey of chemical aspects of major environmental issues: stratospheric ozone holes and chlorofluorocarbons; air pollution; global climate change; fossil fuel energy/"carbon footprint"; renewable energy; nuclear energy/radioactivity; toxic chemicals (pesticides, PCBs); endocrine disruptors; surfactants, chemical dispersants/oil spills; biodegradability of chemicals; chemistry of natural waters/acid rain; toxic heavy metals. Prerequisites: Ch 334 or Ch 331. This is the same course as CE 486 and can be taken only once for credit.

Ch 487**Aquatic Chemistry (4)**

Aqueous chemistry in natural water systems: simple-to-complex acid/base chemistry; titration curves; buffer strength; acid/base chemistry of carbon dioxide in open and closed systems; alkalinity as system variable (blood); mineral dissolution/

precipitation (metal carbonates); redox chemistry: pe-pH, redox succession/organic loading/dissolved oxygen loss, nitrate reduction, iron oxide dissolution, hydrogen sulfide production, methane formation. Prerequisites: Ch 223. This is the same course as CE 487 and can be taken only once for credit.

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. Prerequisite: Ch 336. Recommended pre- or corequisites: Ch 440, 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. 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. 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. Prerequisite: Ch 491/591 or concurrent enrollment.

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 621**Advanced Analytical Theory (3)**

Modern methods of analysis and their application to the analytical chemistry of elements. Prerequisite: Ch 442/542.

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 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 (4)**

Chemical kinetics in the gas phase and in solution, catalysis, and absolute rate theory. Expected preparation: Ch 442/542.

Ch 663**Chemical Thermodynamics (3)**

The laws of thermodynamics and their applications. Prerequisite: Ch 442/542.

Ch 665**Statistical Thermodynamics (3)**

Foundations of the subject with application to the equilibrium thermodynamics of gases, liquids, and solids.

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 (4)**

Chemical and physical properties of enzymes; energetics, kinetics, and mechanism of enzymatic reactions. Prerequisite: Ch 492/592.

Ch 694**Nucleic Acid Structure and Function (4)**

Comprehensive examination of nucleic acid structure-function relationships at the molecular level. Geometry of DNA and RNA will be presented, along with the impact this has on gene expression. DNA structural thermodynamics and RNA-directed catalysis will also be covered. Prerequisites: completion of a full year of undergraduate-level biochemistry (Ch 490, 491, 492).

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.

Chicano/Latino Studies

150 Extended Studies Building
503-725- 8499 or 503-725-3472
www.pdx.edu/chla

Certificate in Chicano/Latino Studies

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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. 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.

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 prepared 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	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 390 Latinos in the Pacific Northwest (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 Education System (4)	
Total	36

Courses

ChLa 201

Introduction to Chicano/Latino Studies (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 390

Latinos in the Pacific Northwest (4)

Introduction to past and present experiences of Mexicans and other Latin American-origin populations in the U.S. Pacific Northwest. Attention to current population growth, including sources of migration and settlement patterns. Explores the present social, economic, and political status of Latinos in this region of the country. Prerequisite: ChLa 201.

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 Education (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.

Communication

University Center Building
520 SW Harrison St., Suite 440
503-725-5384
www.pdx.edu/communication/

B.A., B.S.
Minor
Honors
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 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 communication, listen effectively, and be sensitive and adaptive to communicative encounters with persons of diverse abilities, backgrounds, and situations. 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.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See

page 33 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: In addition to meeting the general University requirements, the student must complete a minimum of 60 credits in communication courses plus Writing 222 or 333 for a total of 64 credits.

	Credits
Comm 200 Principles of Communication	4
Comm 311 Research Methods in Communication	4
Comm 316 Communication, Individuals and Discourse.....	4
Comm 326 Communication, Society and Culture..	4
Communication electives.....	44
Total	60
Wr 222 or Wr 333.....	4
Total required courses	64

Of the 44 credits of communication electives,

- At least 36 must be in upper-division communication studies courses, of which
- At least 16 must be in course numbered 400 and above.
- No more than 8 credits may be counted toward the major from courses numbered Comm 401 through Comm 409, including Communication Internship.

Requirements for minor in communication: To earn a minor in communication, a student must complete 28 credits with a minimum of 16 credits at the upper-division level. Total for Comm 404 and Comm 409 may not exceed 8 credits. A minimum of 12 credits must be taken in residence at PSU.

Requirements for minor in film studies: Students may elect to pursue a minor in film studies, jointly offered by Communication, English, and Theater Arts and should consult the department adviser for a complete list of courses that apply to the minor from offerings in Communication, English, and Theater Arts. A minimum of 20 adviser-approved credits in film studies is required. At least 16 of these credits must be taken at Portland State University from any of the three participating departments, and 16 credits must be upper-division.

Courses taken under the undifferentiated grading system (pass/no pass) will not be counted. A minimum grade of C is required for courses to be counted toward the minor. Adviser-approved film courses taken in communication will also be credited toward the major.

Graduate program

The Department of Communication offers graduate work leading to the degrees of Master of Arts and Master of Science in Communication. Our faculty concentrate on research in the areas of health communication, mass media, political communication, language and social interaction.

Admission requirements

Admission to the program occurs once a year. All materials are due by February 1 for students to be considered for fall term admission. Applicants must also apply separately to Portland State University (see PSU Web site for information and deadlines).

For admission to graduate study, the student's background and preparation should reflect an ability to pursue graduate work in communication. 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.

Application process. Prospective students should check the Department Web site for specific application details, and applications should be received by February 1.

Applicants submit a letter of introduction, a statement of purpose as to why they want to pursue an advanced degree in communication, official transcripts, TOEFL (for international students), GRE scores, three letters of recommendation, writing samples, and application forms. Whenever possible the three letters of recommendation should come from individuals closely acquainted with the applicant's academic career. For a list of requirements visit the Communication Department Web site, <http://www.pdx.edu/communication/>.

All students are admitted to the program on a conditional status. The conditional status will be removed when the graduate faculty determine that the student has made satisfactory progress in her or his academic program. Satisfactory progress is determined after students have completed at least 12 credits. Students will be required to earn a minimum grade point average of 3.0, and students who earn less than a B-minus in any class will have their progress reviewed by the graduate faculty. If the faculty agree that the student has made satisfactory progress the conditional status will be removed.

Degree and program requirements

All students must meet both University and Department requirements to successfully complete the program in communication. We offer a Master of Arts and a Master of Science degree. The M.A. requires foreign language proficiency, while the M.S. does not. All students must complete a total of 50 graduate credits, of which 42 are taken in coursework, plus an additional 8 credits toward the student's thesis or project. Students entering the 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 particular interests in the study of communication.

Each student's program must be based on the following:

Requirements

Core theory courses: Each student is required to take one core theory course:

Comm 511 Introduction to Communication Theory	4
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Core methods courses:

Three core methods courses (listed below) are required of each student and include the following:

Comm 521 Quantitative Methods of Communication Research	
Comm 531 Qualitative Methods of Communication Research;	
Comm 532 Critical Methods of Media Inquiry.....	12

Elective Area:

At least 5 courses 20
Students are encouraged to choose electives from within the Department, and courses taken outside the Department must be approved by student's program adviser in order to count toward the requirements of the degree.

Every student is encouraged to take one credit of Comm 507 (Communication Research Apprenticeship) per quarter (a maximum of 6 credits may be counted toward the requirements of the degree). Comm 507 involves working closely with a faculty member in order to gain hands-on experience in how to conduct communication research..... 6

Thesis:

(8 credits) OR

Project:

At least 8 credits	8
Total:	50

Program options

All students complete one of the following with close supervision of their adviser. We strongly encourage students to pursue the thesis option.

- a. Thesis. The thesis entails a systematic study of a significant problem and contributes to the body of knowledge relevant to the study. Theses may be either quantitative or qualitative. Each student who elects the thesis option will complete a written thesis and pass a final oral examination on the thesis. Prior to beginning work on the thesis, students must demonstrate proficiency in relevant theories and research methods.

Students must complete at least 8 thesis credits (Comm 503).

- b. Project. Students who elect the project option must first have the approval of the graduate faculty. All projects must be grounded in relevant theories, concepts and practices, and all students who chose this option must demonstrate appropriate research and methodological competency. Students must complete at least 8 project credits (Comm 506).

Courses

Not all courses, except for the core, will be offered every year.

Comm 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.

Comm 199

Special Studies (Credit to be arranged.)

Comm 200

Principles of Communication (4)

Introduces the skills and concepts students need for literacy in communication and provides a broad introduction to the perspectives on communication that will be encountered in upper-division Communication courses. Pre-requisite for Comm 311, Comm 316 and Comm 326.

Comm 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 media research. Class research project examines content of contemporary commercial media.

Comm 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 differences and 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.

Comm 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, charac-

teristics of functional relational systems, intercultural/inter-ethnic factors.

Comm 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.

Comm 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.

Comm 311

Research Methods in Communication (4)

Introduction to the assumptions and methods of research 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. Prerequisites: Wr 222 or 333, and Comm 200.

Comm 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.

Comm 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, and 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.

Comm 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. Comm 100 or Comm 220 recommended.

Comm 316

Communication, Individuals and Discourse (4)

Extends the discussion of empirical approaches to communication introduced in Comm 200. Introduces relevant social science theories of communication including theories based on cognitive, evolutionary, social psychological, constitutive and social cultural approaches. Students will study communication as a process through which indi-

viduals mutually shape and are shaped by culture through discourse. Comm 316 is a requirement for the communication major and is recommended as a pre-requisite for all 400-level communication courses. Prerequisites: Comm 200.

Comm 317

Communicating About Violence and Children (4)

Investigation of endangered and violated children in environments including domestic and global. Threats to children's safety, survival, quality of life, family or alternative care, education, health and health care, and basic human rights are examined. Trends in public awareness, information systems, organizational advocacy and intervention efforts are assessed for impact and effectiveness. Students will employ specific listening and speaking practices to promote substantive class discussions. Areas of violence investigated include: physical, sexual and verbal abuse; child soldiers; slavery; war; starvation, disease and displacement; teaching hatred; religion used as a weapon; cyber-stalking and bullying.

Comm 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.

Comm 323

Introduction to Organizational Communication (4)

The goal of this course is to introduce students to theories that examine how communication works in business contexts. Students will study organizational management, interpersonal conflict and conflict management in organizations. Students will learn to apply course concepts to business interactions and practices. This course is recommended preparation for Comm 423.

Comm 326

Communication, Society and Culture (4)

Develops the idea that communicative action is theoretically driven; continues the discussion of constitutive and social-cultural theories; distinguishes between normative and social science theories of communication and introduces cultural and critical theories of communication. Comm 326 develops ideas of interpretation and critique that are introduced in Comm 200. The course extends ideas of normative theorizing including interpretive, critical and cultural theories of communication. Prerequisites: Comm 200. Required for communication majors.

Comm 329

Introduction to Health Communication (4)

Introduces students to the breadth of health communication theory and research. Course topics include provider-patient communication, social support, uncertainty management, health literacy, and health campaigns.

Comm 336

Metaphors in Communication (4)

An introduction to the use and understanding of metaphors in conversation, public communication, and mediated communication. Topics include metaphor comprehension, metaphorical

framing, patterns of metaphor use in discourse, and interaction of metaphors with communication context. No prior familiarity with the metaphor literature is assumed.

Comm 337

Communication and Gender (4)

Study and practice of the skills involved in competent communication (primarily comprehensive listening, reading, 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.

Comm 341

Introduction to Public Relations (4)

An introduction to the principles and practice of professional public relations, focusing on the functions of PR in organizations, the concept of strategic communication in persuasion, relevant professional skills, the role of research, and an understanding of common ethical issues encountered. Prerequisites: Comm 200.

Comm 362

Bollywood: Communicating Contemporary South Asia through Cinema (4)

Bollywood is a spectrum of major media industries in India and South Asia that produce entertainment for worldwide consumption. Bollywood is a recent term that highlights the transnational character of the Industry, very much like Hollywood. Specifically we will examine transnational Indian Cinema with the following emphases: 1. globalization and the politics of transnational film production, distribution, and reception; 2. local-regional-global dynamics; 3. the construction and negotiation of gender, family, nation, religion/communalism, and emerging new filmic genres; 4. issues of filmic representation and diasporic identities.

Comm 389

Ethics of Human Communication (4)

Applies important ethical theories to communication settings and problems, including aspects of interpersonal, group, organization, public, Internet and mass communication, showing how ethics relate to all communication events. Reveals how communication can either validate or undermine the basic humanity, dignity and value of others in the communication setting. Prerequisite: junior standing, open to those outside of communication.

Comm 399

Special Studies (Credit to be arranged)

Comm 401/501

Research (Credit to be arranged)

Consent of instructor. Communication Laboratory

Comm 404/504

Cooperative Education/Internship (Credit to be arranged)

Comm 405/505

Reading and Conference (Credit to be arranged)

Consent of instructor

Comm 406/506

Special Projects (Credit to be arranged)

Consent of instructor

Comm 407/507

Seminar (Credit to be arranged)

Comm 408/508

Workshop (Credit to be arranged)

Comm 409/509

Practicum (Credit to be arranged)

Comm 410/510

Selected Topics (Credit to be arranged)

***Comm 412/512**

Empirical Theories

of Mass Communication (4)

Surveys social scientific theories of mass communication. Prerequisite: Comm 212. Stat 243, Comm 314, or Psy 342 recommended.

Comm 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 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.

***Comm 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. Comm 218, 313, 314, or 324 recommended.

***Comm 418/518**

Advanced Interpersonal Communication (4)

Theory course in which students analyze current concepts and theories related to inter-personal 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.

Comm 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. Comm 212 recommended.

Comm 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.

Comm 423/523

Advanced Organizational and Strategic 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, organizational culture, and strategic communication. Course requirements include completion and report of a research project. Prerequisites: upper-division standing. Expected preparation: Comm 313 or Comm 323.

***Comm 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.

Comm 429/529

Health Communication Campaigns (4)

In-depth examination of health communication campaigns that promote behavior change using theories at the individual, interpersonal, small group, and community levels. We will explore the current media environment, in which health communication campaigns can utilize a variety of communication channels including mobile phones, social networks, video games, and entertainment television. Prerequisites: upper-division standing.

***Comm 436/536**

Communication and Cognition (4)

Exploration of human communication from a cognitive perspective. Prerequisites: graduate standing or Comm 316. Prerequisites may be waived with consent of instructor. May be taken for honors with instructor permission.

***Comm 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 non-verbal 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.

***Comm 438/538**

Everyday Talk: Structure and Process (4)

How humans organize talk, with a primary emphasis on face-to-face talk in an informal setting. Attention will be given to the structure of roles and turns, sequencing of stages and topics,

issues of common ground and relevance, and cognitive processes of message origination and interpretation in particular contexts. Recommended prerequisites: Comm 311 or equivalent; upper division or graduate standing.

***Comm 439/539**

Gesture and Meaning in Everyday Talk (4)

How humans use gesture and vocal intonation in conversation, with a primary emphasis on informal settings, interaction of gesture with language, metaphorical aspects of gesture, and the contribution of gesture to cognitive and interactive processes of message origination and interpretation. Recommended prerequisites: Comm 311 or equivalent; upper-division or graduate standing.

***Comm 440/540**

Metaphor, Play, and Humor (4)

How metaphor, play, humor, and other forms of "non-serious" language and gesture contribute to the creation of meaning and sustaining of relationships in everyday social interactions. Topics vary from quarter to quarter, and may include: metaphor; playful communication; humor and irony; and narratives. May be repeated for undergraduate or graduate credit. Recommended prerequisites: Comm 311 or equivalent; upper-division or graduate standing.

***Comm 447**

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.

Comm 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 theoretical and methodological 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.

***Comm 460/560**

Framing and Mass Media (4)

Examines how messages are constructed and the effects frames have on audiences. Framing theory is linked to propaganda, public relations, marketing, political communication and cognition, and has a rich theoretical and methodological tradition. Examines the conceptual definitions, and the underpinning theory and methodology used in framing scholarship. Agenda setting, bias and framing, public opinion formation, cultivation analysis, behavioral effects, and macrolevel and microlevel methods are also examined.

***Comm 472/572**

Communication and Public Opinion Seminar (4)

This course explores research questions that relate to mass communication and American public opinion. Important normative and philosophical issues are identified and reviewed via early writings (ca. 1900) in social philosophy and social science. These issues are further investigated by examining relevant work from sociology, social psychology, and mass communication. Prerequisites: Comm 316 or graduate standing.

***Comm 487/587**

Propaganda, Public Relations, and Media (4)

Introduction to how mass media, particularly film, are used to promote causes, influence opinion, sell products and promote stereotypes. Two streams of theory are pivotal to the course: theories of propaganda, public relations, persuasion and mass media, and film theory. Prerequisite: junior, senior or graduate standing.

Comm 503

Thesis (Credit to be arranged.)

Comm 506

Project (Credit to be arranged.)

***Comm 511**

Introduction to Communication Theory (4)

Introduction to the theoretical perspectives currently represented in the department, with attention to meta-theoretical considerations including ontology, epistemology, and axiology, and how these considerations shape the understanding of key concepts. Students will learn to critique and synthesize theoretical literature within each perspective.

***Comm 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.

***Comm 514**

Topics in 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 communication from modernist and post-modernist perspectives. Specific topics vary with instructor. May be repeated for graduate credit.

Comm 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.

***Comm 525**

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.

***Comm 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: graduate standing or permission of instructor.

Comm 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.

Comm 532

Critical Methods of Media Inquiry (4)

Prepares graduate students for understanding and employing critical methodologies in research. Contrasts the context-based critical mode of inquiry with the epistemological premises in positivistic claims of value-free research. Offers ways of integrating theory, methods, research strategy, and social criticism.

***Comm 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.

***Comm 556**

Seminar: Topics in 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. May be repeated for graduate credit. Prerequisite: graduate standing.

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 65. 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, Comm 521, Comm 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 302

Peace Studies (4)

This introductory course explores the general questions of war and peace with units on history of peace, nonviolent conflict resolution, religious and philosophical peace orientations, costs and benefits of war and peace, laws of war and peace, selected peace leader biographies.

CR 304

Participating in Democracy (4)

This course is designed to explore the meaning of democracy by constructing the notion of 'living democracy'. The importance of participating in democracy and the impediments are explored. Historical and present examples will be used to illustrate forms civic participation on the local, regional, national and international level.

CR 305

Ecology of War and Peace (4)

Looks at environmental effects of waging and preparing to wage war, natural resource drivers to war, and what an ecology of peace would look like and what it would accomplish. Conceptually, what is a more thorough and accurate cost-benefit analysis of methods of nation-state conflict management, using the US as the case example.

CR 306

Introduction to Nonviolence (4)

This course examines nonviolence from several perspectives, including units on philosophical and religious nonviolence, nonviolent communication, nonviolent response to personal attack, Gandhian nonviolence, Sharp strategic nonviolence, and the emergent field of nonviolent conflict forensics.

CR 417

Introduction to Nonviolence (4)

Analysis of history of nonviolent action, of campaigns for social change, of national liberation and of protection of populations and their resources through witness, interposition and other nonviolent strategies and tactics. Surveys the roots of the practitioners from religious to secular, personal to political and studies examples of success and failure.

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 516

Evil and Hate (4)

Explores the breakdown in dialogue surrounding the stereotyping and dehumanization of those who we view as "evil doers." Challenges unreflective use the terms, "hated" and "evil" in political rhetoric, creating a dangerous "us and them" dichotomy, and making reconciliation across cultures and viewpoints nearly impossible.

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 519

Forgiveness and Atonement (4)

Explores both the theoretical and practical advantages and difficulties with forgiveness and atonement. Emphasis on how forgiveness and atonement inform conflict resolution practices.

CR 522

Thesis and Project Prep Seminar (1)

Introduction to the culminating requirement of the CR graduate program distinguishes between the two options: thesis and project. Students dis-

cuss the different goals, activities, processes, and outcomes of the two options and review these and projects written by predecessors. Prerequisite: Admission to graduate 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.

CR 527

Nationalism and Ethnic Conflict (4)

Interdisciplinary inquiry into leading perspectives and theories of nationalism. Examined as a determinant factor of international and interethnic conflict. Analyzed through multiple case-specific conflict phenomena. Assessed in terms of its historical roots, evolution, structural patterns and socio-political antecedents and consequences.

CR 529

European Union as a Peacebuilding System (4)

Interdisciplinary focus on the European Union as an inter- and trans-national system of conflict resolution and peace building. Examined by contrasting the nationalist conflicts of old Europe to post-war efforts in building a system of peace and security that transcends belligerent ethnocentric nationalism.

Economics

241 Cramer Hall
503-725-3915
www.pdx.edu/econ

B.A., B.S.
Honors in Economics
Minor in Economics
Minor in International Economics
Minor in Political Economy
Secondary Education Program—
Social Science
M.S., M.A.
M.S.T. and M.A.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

Economics majors take 48 credits in economics plus 12 credits in mathematics and statistics for a total of 60 credits. Economics offers a broad range of classes from economic history to mathematical economics. Majors are advised to contact the Undergraduate Director for the Department of Economics early on for assistance with planning an individualized program of study.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University.

Majors who are considering graduate school will need to tailor their undergraduate program for this purpose and should seek advice prior to the start of their junior

year.

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 311 Microeconomic Theory	4
Ec 312 Macroeconomic Theory	4
Ec 456, 457, 460, 469 (any one course).....	4
A minimum total of 28 credits of 300 and 400-level coursework, including Ec 456, 457, 460, and 469 when not used to satisfy the 4-credit requirement immediately above. At least 16 of these credits must be in courses numbered 410 and above.....	28
Total in economics	48
Mth 251 Calculus I.....	4
Stat 243, 244 Introduction to Probability and Statistics.....	8
Total in other fields	12
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 taken for a letter grade and must be graded C- or above. Ec 403 (Honors Thesis) cannot be used to satisfy the requirements for the major in economics.

Honors in Economics. The Honors Program allows outstanding majors in the Department of Economics to conduct research with a faculty member and to receive recognition for their exceptional performance. Honors students participate in faculty research projects or pursue an independent honors thesis under faculty guidance.

To earn an Honors degree, interested students should apply to the Undergraduate Director after they have completed Ec 201, Ec 202, Ec 311, and Ec 312. It is recommended that students either complete Mth 251, Stat 243, Stat 244 and one of the following: Ec 456, Ec 457, Ec 460, Ec 469 OR that they enroll concurrently in these courses while working on the Honors program. Students admitted to the Honors Program complete the following requirements:

- 8 credits of Ec 403 which cannot be used to satisfy the requirements for the BA/BS in economics
- Students typically take 2 credit hours per

term of Ec 403-Honors Thesis during the first two terms of their honors studies and 4 credit hours of Ec 403-Honors Thesis during the third term of their honors studies.

- A written thesis is required to be completed during the third term of enrollment in Ec 403.
- Honors students present their theses as the final requirement for department honors..

Applicants are required to have earned a minimum GPA of 3.50 in economics courses. Applicants to the Honors Program should submit to the Undergraduate Director their transcript, an honors thesis proposal and a letter of support from an economics faculty member who has agreed to serve as the applicant's advisor.

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 or 469 will be accepted for this minor. No omnibus courses other than 399 and 410 will be accepted).....	20
Total	28

Courses must be taken for a letter grade and must be graded C- or above.

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:

	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 447 Economics of Transition	
Ec 448 East Asian Economic Development	
Ec 450 Economics of Development	
Total	28

Courses must be taken for a letter grade and must be graded C- or above.

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 338 The Political Economy of Latin America
 Ec 339 Political Economy of Japanese Development
 Ec 345 Marxist Political Economy
 Ec 348 The Globalization Debate
 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 Economics of Development
 Ec 451 Small Businesses in Developing Areas

Total 28

Courses must be taken for a letter grade and must be graded C- or above.

Graduate programs

The Department of Economics offers graduate work leading to the Master of Science and Master of Arts degrees.

Admission requirements

Master of Science or Master of Arts.

Admission to the Master's program in the Department of Economics requires, in addition to the University admissions requirements:

1. GPA Requirements: Admission to the Economics program is highly competitive and requires a minimum of a 3.00 GPA in overall undergraduate coursework.
2. Coursework: Undergraduate courses in Intermediate Microeconomics, Intermediate Macroeconomics, Statistics, Econometrics and Multivariate Calculus, as well as Linear Algebra, are required for admission.
3. Testing: Minimum GRE scores of 300 (quantitative and verbal combined; 1100 by the old GRE scale). Request that Educational Testing Services (ETS) send a copy of your scores to 4610 (Department of Economics at PSU). The GMAT with a score of 520 or higher may be considered in lieu of the GRE. The TOEFL is required for University admission for international students, unless they have a degree from a university in Australia, English-speaking Canada, Great Britain, Ireland, New Zealand or the U.S. See University minimum TOEFL requirements at <http://www.pdx.edu/admissions/english-language-proficiency-requirements-graduate>.
4. Recommendations: Three (3) letters of recommendation, at least two of which should be from Economics professors, should be sent either by mail to: Department of Economics, PSU, P.O. Box 751, Portland, OR 97207-0751 or by email to Graduate Program Coordinator, Department of Economics at econ@pdx.edu.
5. Statement of Purpose: Approximately 500-word essay on goals and aspirations

for entering and completing the graduate program.

6. Application/Transcripts: Official transcripts from any other institutions (other than PSU) you may have attended. You will need an official transcript sent to the PSU Admissions Office for University admission AND an official transcript sent to the Department of Economics, PSU, P.O. Box 751, Portland, OR 97207-0751.

Degree requirements

Master of Science or Master of Arts.

The Master of Arts has the same requirements as a Master of Science, but Master of Arts has an additional requirement of a foreign language. Students must complete a nine-course core requirement (36 credits), with 52 credits in total. Credit requirements beyond the core courses may be satisfied entirely with economics elective courses or partially with a maximum of 8 credits of economics research. Students have two options for completing the economics electives and/or research requirement:

1. elect 16 credits of economics electives
2. elect 8 (maximum 12) credits of economics elective courses and 8 (minimum 4) credits of research to be completed in any combination of Ec 501, Ec 596 and Ec 597.

Economics elective courses may be substituted by graduate courses from other departments with *prior* Department of Economics approval.

Credits

Core economics courses.....	36
Ec 560 History of Economic Thought (4)	
Ec 570 Econometrics (4)	
Ec 571 Advanced Econometrics (4)	
Ec 580 Mathematical Economics (4)	
Ec 581 Advanced Microeconomics (4)	
Ec 582 Advanced Macroeconomics (4)	
Ec 591 Applications of Advanced Microeconomic Theory (4)	
Ec 592 Applications of Advanced Macroeconomic Theory (4)	
Ec 595 Applications of Advanced Econometrics (4)	
Economics electives and/or Economics Research	16
Option I: Economics Electives (16)	
Option II: Economic Electives (8-12) and Economics Research (4-8)	
Total	<u>52</u>

Students with questions concerning transferred credits should contact the Graduate advisor.

GRADUATE CERTIFICATE IN ENVIRONMENTAL AND RESOURCE ECONOMICS

The Graduate Certificate in Environmental and Resource Economics provides students with an understanding of the critical linkages between economics and key environmental issues. It also offers an introduction to the most important analytical tools, including cost-benefit analysis.

Principles of microeconomics is a prereq-

uisite for two core courses. Undergraduate intermediate microeconomics and econometrics are recommended prior to enrollment, but not required. Completion of the program requires a total of 16 graduate credits including:

- Resource and Environmental Economics (Ec 530)
- Cost-Benefit Analysis (Ec 585)
- Economics of Sustainability: Theory and Practice (Ec 522)
- Any two graduate economics courses numbered 510/610 or above are automatically approved as electives. Courses from other departments can be applied to the electives requirements with prior approval of the Graduate Program Director.

Courses

Courses with an asterisk () are not offered every year.*

*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 Micro-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 Macro-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. Prerequisites: Ec 201.

Ec 311

Microeconomic Theory (4)

Theories of consumer behavior and demand, production and cost, the firm and market organization, strategic behavior, and functional income distribution. This course cannot be counted as credit for economics graduate students, but may be taken by graduate students in other programs. Prerequisites: Ec 201.

Ec 312

Macroeconomic Theory (4)

Examines tools and models to analyze factors influencing the levels of output, employment, and prices. Fundamentals of the theory of Business cycles, economic growth, inflation. The role of government in dealing with these and related problems. This course cannot be counted as credit for economics graduate students, but may be taken by graduate students in other programs. Prerequisites: Ec 202, Ec 311 or consent of instructor.

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 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 321**Fundamentals of Game Theory (4)**

Introduction to the theory of games and their applications in economics. Examines how some broad classes of games can be used to study the strategic choices of economic agents under circumstances of imperfect competition and/or information.

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 339*Political Economy of****Japanese Development (4)**

Key topics in the economic development of Japan in modern times. Investigation of political, social, and historical factors that enabled Japan to achieve its “miraculous” development since 1867 through the post-WWII era. Examination of aspects of Japan’s experience that can be applicable to development issues of other countries.

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.

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 350**Economics of Developing Countries (4)**

The economics of most of the world. Examines the concept and history of development, the causes of economic growth, poverty and inequality, population growth, education and health, sustainable development, the impact of international trade, and foreign aid.

Ec 380**Introduction to Mathematical Economics (4)**

Economic concepts are explored using mathematical methods. Applications are drawn from a wide range of fields in economics including microeconomics, macroeconomics, economic growth, international trade, international finance, labor and environmental economics, industrial organization and development economics. Mathematical methods utilized include equations, functions, sets total and partial differentiation, and linear algebra. Prerequisites: Mth 251, Ec 201, Ec 202.

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.)**

By prior arrangement with a faculty member, economics majors may integrate their practical experience with an economics issue into their academic education. Students are expected to provide a brief proposal of the topic they wish to pursue, demonstrating some familiarity with the economics literature in the area and the way in which their internship or other experience will illustrate practical aspects of the proposed topic. Evaluation on the basis of written and oral syntheses of academic and practical knowledge. Only in unusual circumstances will more than 4 credits be granted for cooperative education/internship. Prerequisites: Ec 201, Ec 202, and consent of instructor.

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 418/518**Economics Department Seminar (1)**

Economics majors, minors, graduate students and other students currently enrolled in an economics course may enroll in the Economics Department Seminar, which brings academic and professional economists to campus to present research on a wide variety of topics, using the spectrum of methodological approaches. Prerequisites: junior standing.

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. Prerequisites: Ec 201, 202; Ec 312 or consent of instructor.

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. Prerequisites: Ec 201; Ec 311 or consent of instructor.

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 430/530**Resource and Environmental Economics (4)**

Overview of different approaches to economic analysis of resources and environment, and fundamental issues of economy/environment interactions, as well as the emerging subject of sustainability. Covers the basics of standard environmental and resource economics including the theory of externalities, resource allocation over time, common property resources, public goods and valuation. Includes an overview of the economic dimension of policies designed to protect and improve environmental quality and protect and efficiently manage natural resources. Prerequisite: 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**Advanced Environmental Economics (4)**

Examination of the economics of environmental degradation, externalities and pollution control. Emphasis is on the theoretical aspects of market failure, policies/regulations to promote efficient outcomes and policy applications. Prerequisites: Ec 311 and Ec 430/530 or permission of instructor. Ec 469 or equivalent recommended.

Ec 433/533**Advanced Natural Resource Economics (4)**

An examination of the economic concepts and theories for analyzing natural resource production, extraction and use. Focus on natural resources, such as land, minerals, forests, fisheries and wildlife and the barriers to achieving sustainability. Regional, national and international case studies used to illustrate key policy issues. Prerequisites: Ec 311 and Ec 430/530 or permission of instructor. Ec 469 or equivalent recommended.

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 policy and issues of economic integration, economic growth, and current trade problems. Prerequisites: Ec 201; Ec 311 or consent of instructor.

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. Prerequisites: Ec 201, Ec 202; Ec 312 or consent of instructor.

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, hydropow-

er). 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 448/548**East Asian Economic Development (4)**

Key topics in the development of East Asian economies, especially, Japan, China, South Korea, and several Southeast Asian countries. Economic theory will be applied to investigate the validity of the "Asian economic growth model," while examining political, social and historical factors of the area and comparing the experience of these economies with that of other developing countries. Prerequisites: Ec 201, 202 or consent of instructor.

Ec 450/550**Economics of 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. Prerequisites: Ec 201, 202.

Ec 451/551*Microenterprises 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.

† Also offered as Hst 438/538*

‡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 439/539*

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. Prerequisites: Ec 201, 202.

Ec 461/561*The Economics of Empire and War (4)**

Historical and contemporary analyses of the economic motivations and consequences of imperialism and war, distinguishing formal and informal imperialism, with a particular focus on the recent history of the United States. Prerequisites: junior standing. Expected preparation: Ec 201 and 202.

Ec 465/565**Labor Economics (4)**

This course investigates the determinants of wages, the decision to work, the reasons demographic groups fare differently in the labor market, and sources of unemployment. Also considers current developments in labor markets of increasing wage inequality, globalization, declining unionization, and widespread use of new technologies. Prerequisites: Ec 201; Ec 311 or consent of instructor.

Ec 466/566*The Political Economy of Mexican Migration (4)**

A substantial proportion of people born in Mexico is estimated to live in the U.S. This course is designed to provide an economic understanding of this phenomenon, by investigating economic analyses of development, poverty, inequality, wage determination and migra-

tion; with particular attention to the economic situation in the U.S. and Mexico, and the economic relations between the two nations.

Prerequisites: junior standing. Expected preparation: Ec 201 and Ec 202.

Ec 469/569**Introduction to Econometrics (4)**

General survey of empirical techniques useful for economic analysis. Focus on the applications of mathematical tools and regression analysis in economics. Quantitative topics will be introduced systematically with hands-on case studies and examples related to the fields of economics, public policy, and urban studies. This course will not be counted as credit for economics graduate students, but may be taken by graduate students in other programs. Prerequisites: Ec 201, 202, Mth 251, Stat 243 and 244.

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 469 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. Prerequisites: Ec 311, 312, and 380 (or equivalently: Mth 251, 252 and Mth 261 in place of Ec 380).

Ec 485/585**Cost-benefit Analysis (4)**

Main theory and empirical methodologies for assessing costs and benefits of projects with varying timeframes and levels of uncertainty. Focus on public projects, including environmental, infrastructure and social service activities. Methodologies for valuation of nonmarketed goods, such as environmental services, also covered. Prerequisite: Ec 201.

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 474.

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 474.

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 nonprofit 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. Prerequisites: Ec 469 or consent of instructor.

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. Prerequisites: Ec 570 or consent of instructor.

Ec 581**Advanced Microeconomics (4)**

Theory of consumer behavior and of the firm. Market and multimarket equilibrium and stability. Varieties of imperfect competition. Prerequisites: Ec 480/580 or consent of instructor.

Ec 582**Advanced Macroeconomics (4)**

Theories of national income, employment and price levels with special emphasis on recent developments in analytical techniques and empirical findings. Prerequisites: Ec 480/580 or consent of instructor and Ec 581 or consent of instructor.

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 free-way location techniques for valuation of non-priced 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 474.

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. Prerequisites: Ec 581 or consent of instructor.

Ec 592**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. Prerequisites: Ec 582 or consent of instructor.

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. Prerequisites: Ec 570, 571 or consent of instructor.

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.

*** Ec 698**
Ecosystem Services Valuation: An Integrated Assessment (4)

Explore environmental, social and economic theories of valuation, quantitative and qualitative methods for incorporating the values into ecosystem service management decisions, novel approaches for integrating each type of values into comprehensive measures and applications through interdisciplinary team projects. Prerequisites: ESR 692, Soc 694 and Geog 696 or instructor's permission. This is the same course as Mgmt 698; may only be taken once for credit.

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
M.A. in English
M.A./M.S. in Writing
M.F.A in Creative 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.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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 204 Survey of English Literature	
Eng 205 Survey of English Literature	
Eng 253 Survey of American Literature	
Eng 254 Survey of 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 criticism and practice	4
Eng 491, 492 Literary Criticism	
Eng 493 Advanced Topics in Feminist Theory	
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 309 American Indian Literature	
Eng 330 Jewish and Israeli Literature	
Eng 351, 352, 353 African American Literature	
Eng 367 Topics in American Literature and Culture	
Eng 372 Topics in Literature, Gender, and Sexuality	
Eng 373 Topics in Literature, Race, and Ethnicity	
Eng 387 Women's Literature	
Eng 420 Caribbean Literature	
Eng 421, 422 African Fiction	
Eng 441 Advanced Topics in Renaissance Literature and Culture	
Eng 443, 444 British Women Writers	
Eng 445, 446 American Women Writers	
Eng 467 Advanced Topics in American Literature and Culture	
Eng 469 Asian-American Literature and Culture	

Period Studies and British and American Literature (Group C)

At least one pre-1800 courses	4
At least two upper division courses must be 400 level English courses (course prefix "Eng"	8
Eng 301 [‡] Topics: Shakespeare	
Eng 311 [‡] Tragedy	
Eng 312 [‡] Comedy and Satire	
Eng 313 The American Short Story	
Eng 314 [‡] The Epic	
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 351, 352, 353 African American 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 [‡] Advanced Topics in Medieval Literature	
Eng 430 [‡] Advanced Topics in Sixteenth Century Literature	
Eng 440 [‡] Advanced Topics in Seventeenth Century Literature	
Eng 441 [‡] Advanced Topics In Renaissance Literature and Culture	
Eng 450 Advanced Topics in Eighteenth Century Literature	
Eng 458 [‡] Advanced Topics in Romanticism	

English

- Eng 460[‡] Advanced Topics in American Literature to 1800
- Eng 461 Advanced Topics in American Literature to 1900
- Eng 464 Advanced Topics in American Literature: 20th Century
- Eng 467 Advanced Topics in American Literature and Culture
- Eng 475 Advanced Topics in Victorian Literature
- Eng 477, 478 American Poetry
- Eng 480 Advanced Topics in Twentieth Century British Literature
- Eng 484 Modern Drama
- Eng 485 Contemporary Drama
- Eng 486 Contemporary American Novel
- Eng 487 Contemporary American Short Story
- Eng 488 Contemporary American Poetry

[‡] Indicates pre-1800 courses.

Writing, Rhetoric, Composition, and Linguistics (Group D)

- One upper-division writing course 4
- Elective..... 4
- Eng 331 Introduction to Rhetoric and Composition Studies
- Eng 413 Teaching and Tutoring Writing
- Eng 414 Contemporary Composition Theories
- Eng 415 Research Methods in Composition
- Eng 416 History of Rhetoric
- Eng 425 Practical Grammar
- Eng 490 Advanced Topics in Rhetoric and Composition
- Eng (appropriate adviser-approved course offered under omnibus number)
- Ling 390 Introduction to Language
- Wr 300 Topics in Composition
- 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 394 Writing Careers for English Majors
- Wr 400 Advanced Topics in Composition
- Wr 412 Advanced Fiction Writing*
- Wr 413 Advanced Poetry Writing*
- Wr 416 Screenwriting*
- Wr 420 Writing: Process and Response*
- Wr 425 Advanced Technical Writing
- Wr 426 Document Design
- Wr 427 Technical Editing
- Wr 428 Advanced News Writing
- Wr 429 Writing Computer Documentation
- Wr 430 Desktop Publishing II
- Wr 456 Forms of Nonfiction
- Wr 457 Personal Essay Writing
- Wr 458 Magazine Writing
- Wr 459 Writing the Memoir
- 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)

* Courses may be taken twice for credit.

Electives (Group E)

Electives in theory, literature, writing, and rhetoric. [‡]	16
Total upper-division credits	52
Total	60

[‡]Courses to be selected from any upper-division English or writing course.

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:

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 367 Topics in American Lit and Culture
- Eng 399 Special Studies
- Eng 401 Research
- Eng 404 Cooperative Ed/Internship
- Eng 407 Seminar
- Eng 410 Special Topics
- Eng 441 Advanced Topics in Renaissance Lit and Culture
- Eng 447 Major Forces in Literature
- Eng 448 Major Figures in Literature
- Eng 449 Advanced Topics in Cultural Studies
- Eng 467 Advanced Topics in American Lit and Culture
- Eng 494 Topics in Critical Theory and Methods
- Wr 399 Special Studies
- Wr 410 Special Topics

- Eng 300 Introduction to the English Major is the expected preparation for all 400 level courses in the English major.
- 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. Wr 222 does not count toward the English major.
- Only courses in which a student receives a C or above can count for the English major.
- No more than 12 credits taken for the Minor in Writing may be applied to the English major.
- No more than 8 credits taken for the Minor in Film Studies may be applied to the English major.
- A minimum of 24 credits in English and/or writing at PSU is required to graduate from PSU with a major in English.
- Only courses taken for a letter grade can count toward English major.
- An upper division WLL Literature in Translation course may be used in English with advisor approval.
- Chiron courses will not count toward the English major or the Minors in English, Writing or Film Studies.

Requirements for minor in English. 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 upper-division 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. Upper-division 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.

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):

Group I: Foundation courses **Credits**

- Three courses chosen from the following:..... 12
- Wr 212 Introduction to Fiction Writing
- Wr 213 Introduction to Poetry Writing
- Wr 214 Beginning Nonfiction
- Wr 227 Introduction to Technical Writing
- Wr 228 Introduction to News Writing
- Wr 312 Intermediate Fiction Writing
- Wr 313 Intermediate Poetry Writing
- Wr 327 Technical Report Writing
- Wr 328 News Editing
- Wr 412 Advanced Fiction Writing
- Wr 413 Advanced Poetry Writing
- Wr 427 Technical Editing
- Wr 428 Advanced News Writing
- 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 upper-division courses..... 16
- Eng 425 Practical Grammar
- Wr 330 Desktop Publishing I
- Wr 399 Special Studies. Topics vary, including: Feature Writing, and Nonfiction Writing.
- 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 (300-400 level) writing course, in addition to those above, including a course from another department with a relevant writing component.
- All courses in the minor must be taken for a letter grade.

Total 28

Requirements for minor in film studies.

The film studies minor is offered through the Departments of English, Communication, and Theatre and Film. The minor requires 28 credit hours in appropriate coursework, including internships and adviser-approved courses at the Northwest Film Center (Note: NWFC operates on

semester system). Students may select from a number of courses listed in various departments throughout PSU. These include courses offered by the Departments of World Languages, Art, History, Black Studies, Women, Gender, and Sexuality Studies, Sociology, and more.

28 adviser-approved credits must include:

	Credits
Eng 304 Critical Theory of Cinema	4
TA 331U Understanding Movies	4
Electives	12

Note: Electives may include additional theory or history classes, as well as classes in film production at the Northwest Film Center. All courses in the minor must be taken for a letter grade. Courses taken for fulfillment of the Minor in Film Studies may also be applied to University Studies requirements.

SECONDARY EDUCATION ENDORSEMENT (GTEP)

Students who complete a major in English and wish to teach English in secondary schools must be accepted into PSU's Graduate Teacher Education Program and complete specific requirements in both English and education.

The student must maintain 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 degree.

Admission requirements

- Application deadline January 3rd.
- Applications received after this date may not be reviewed.
- Applicants will be asked to submit the following through the online application found at English.pdx.edu/Eng_Admissions.php:
- Two letters of academic recommendation
- Statement of purpose of study
- Two recent samples of written work to include an analytical essay
- GRE (Graduate Record Exam) scores. Verbal and quantitative scores are required; the subject area exam is optional.

Applicants are expected to have extensive

experience in literary studies, especially English language and literature. Applicants who do not already have a bachelor's degree in English are expected to have taken 20-30 credit hours in literatures in English and writing, so that they come into the program with a knowledge of literary history, excellent writing skills, and experience doing advanced critical analysis in upper-division coursework. Applicants are also expected to have a minimum GPA of 3.25 in all English courses.

Those who do not meet these requirements may be considered for conditional admission. They will need to provide satisfactory evidence of preparedness to undertake advanced work. Their application will need to include:

- 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 paper examination, at least 100 total on the internet-based exam, and at least 250 on the computer-based exam.

Degree requirements

University master's degree requirements are listed on page 65. Department requirements are described in detail in the Department of English brochure, *M.A. in English*, and the *English MA Handbook*, which are available upon request.

Master of Arts. For the M.A., the department requires a minimum of 32 graduate credits in English (courses prefixed with "Eng"), including Eng 500 Problems and Methods of Literary Study, Eng 507 Seminar, 4 credits of pre-1800 British or American literature, 4 credits in literature or rhetoric, whether Anglophone or in translation, before 1900, and 4 credits of critical theory. 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 Director of the English M.A. Program. The student will have a choice of two tracks: I. The three-area, non-thesis option, emphasizing general coverage of literary material. II. The Qualifying Essay option, permitting more specialized research.

Students pursuing option I must choose one specialized area of study that will comprise a portion of their written exam; the rest of the exam will test their general knowledge of the field of English.

Graduate programs in writing

The Department of English offers graduate work leading to the MFA in Creative Writing (Fiction, Nonfiction, and Poetry), the M.A. or M.S. in Publishing, and the M.A. or M.S. in Professional and Technical Writing.

MFA IN CREATIVE WRITING

The MFA degree offers an intensive program of writing in small core workshops and seminars taught by established writers. Students engage in close readings and critiques of their work, and in seminars in which the focus may be a formal element, regional tradition, historical period, the works of a seminal writer or two, or a literary movement. The degree requirements are integrated with the M.A. in English curriculum so that students work with accomplished faculty in literature, critical theory, and rhetoric and composition. The degree emphasizes faculty mentorship throughout each student's coursework and thesis completion. Consistent with PSU's mandate to serve our city's cultural and professional needs, engagement in Portland's vibrant local community of writers is central to our students' movement from academic to creative careers.

MFA students work in a selected genre: fiction, nonfiction or poetry. Prospective students must apply specifically to the genre in which they wish to work. Core workshops are taken in the student's primary genre, but writing electives may allow students to explore other genres. Students of fiction and nonfiction may work in long or short form and the thesis may be a collection of short pieces or a full-length work. Many students come to the Creative Writing program with a background in English literature, writing or journalism, but this is not required. The program can be completed in two years of full-time coursework; however, many students take additional courses or attend part-time, and they have a maximum of four years to complete the degree.

Admission Requirements

Applicants to the M.F.A Program must provide satisfactory evidence of preparedness to undertake advanced work, which would include a B.A. or B.S. degree from a regionally accredited college or university and a 3.25 GPA in undergraduate work. The application deadline is January 3. Applicants must submit the following:

A Departmental application form indicating the genre they will focus on: fiction, nonfiction, or poetry.

One transcript from each post-secondary institution attended.

Three letters of recommendation.

A two-to-three-page, 1.5 spaced personal

introduction describing the applicant’s background as a writer, goals, and interest in this particular program.

Applicants must submit the following through the online application process found at English.pdx.edu/Eng_Admissions.php:

- A letter of introduction.

- A complete set of transcripts. A transcript from each post secondary institution you have attended is required. Unofficial transcripts or photocopies are acceptable for the Department application. You will be asked to upload a transcript for each institution in one of the following supported file types: PDF, JPG, PNG, GIF, or TIF.

- A minimum of three letters of recommendation.

- A manuscript in the applicant’s primary genre. Manuscript form is defined as having one inch margins, double spaced text, a single, clear, 12 point typeface, no extra space between paragraphs, indented first line for each paragraph, information identifying the author and title of the manuscript on every page, and page numbers. Poetry manuscripts may be single spaced. Previously published, single authored work will be accepted. Manuscripts should demonstrate mastery of basic craft and literary promise, and should represent your best work regardless of whether or not it has been published.

- In poetry: 12 15 pages

- In fiction: 20 30 pages

- In nonfiction: 20 30 pages of magazine articles or creative nonfiction

Writing Samples can be comprised of one or multiple bodies of work equal to the page requirements listed above. Writing Samples and optional additional material in the form of a C.V. or resume may be uploaded in one of the following supported file types: PDF, DOC, DOCX, RTE, or TXT.

Note: Graduate Record Examination (GRE) scores are not required for admission to the MFA in Creative Writing.

Degree Requirements

	Credits
Wr 521, 522, or 523 MFA Core Workshops (4 classes).....	16
(Repeat minimum of 4 times)	
Wr Seminars (2 classes).....	8
Electives in Literature (one of which may be in Critical Theory, Rhetoric and Composition) (2 classes).....	8
Writing electives (one must be a workshop or seminar in the MFA program (2 classes).....	8
Thesis (8 credit hours to be arranged).....	8
Total	48

MFA students will complete 48 credit hours of coursework, with 40 credits in writing and 8 in English literature. They must also complete a creative thesis of high literary merit, pass a written examination based on the thesis and an advisor-approved list of

30-40 texts, and pass an oral examination based on the written examination and creative thesis. The MFA curriculum consists of the core workshops: WR 521 (Fiction), 522 (Poetry), and 523 (Nonfiction); two writing seminars; two electives in literature (one of which may be in critical theory or rhetoric and composition); two writing electives; and eight credits of work on the thesis. The MFA core workshops are restricted to MFA students and may be taken six times for a total of 24 credits.

M.A. AND M.S. 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 with specializations in Book Publishing and Technical/Professional Writing. The 48-credit M.A./M.S. in Writing is designed for students who are prepared to undertake advanced work in the field. The program provides a range of courses in technical and professional writing and in book publishing. The motives and destinations of the students in the program vary, but the focus on writing to earn a living will attract those who wish to make writing a career.

The M.A./M.S. in Book Publishing and Technical/Professional Writing programs have rolling admissions which follow the University’s admission deadlines as follows: April 1st for Fall admission only; Jan 3rd for those also applying for both Fall admission and a Graduate Assistantship; Sept. 1st for Winter; Nov. 1st for Spring; and Feb. 1st for Summer.

Please note that all Graduate Assistantship applications, including Technical and Professional Writing, can only be accepted from fall term applicants, who must meet the January 3 deadline. Graduate Assistantships in Publishing are awarded only for one year, and only in the second year of the program; the deadlines for application will be announced within the program annually; and receiving such an appointment is conditional on the appointee remaining for the entire coming school year.

Admission Requirements

Admission to graduate study is granted on the basis of evidence of suitable preparation and the probability of success in the intended field of study. In both Book Publishing and Technical/Professional Writing, strong writing skills are considered central.

Applicants do not need to have a previous degree in English or Writing, but must hold a B.A. or B.S. degree from a regionally accredited college or university. Applicants must also submit the following:

- Both a complete University graduate application and an online Department application. The Department application consists

of the following:

- A letter of introduction.

- A complete set of transcripts. A transcript from each post secondary institution you have attended is required. Unofficial transcripts or photocopies are acceptable for the Department application. You will be asked to upload a transcript for each institution in one of the following supported file types: PDF, JPG, PNG, GIF, or TIF.

- A minimum of three letters of recommendation.

- For Technical Writing, a writing sample of fifteen to thirty pages from customary genres, including (but not limited to) descriptions, specifications, computer documentation, proposals, memoranda, formal reports, newsletters, on line documentation, or web pages. Writing samples should represent your best work and demonstrate mastery of basic craft and promise of success in technical/professional writing. Your writing sample can be comprised of one or multiple bodies of work equal to the page requirements listed above.

- For Publishing, a writing sample of fifteen to thirty pages of written work demonstrating promise of success in the publications industry. Samples may be professional, academic, business, technical, or artistic. Applicants are also welcome to include samples of edited work (with a cover note detailing role), samples of books or other publications designed or published by the applicant (with appropriate notes), or other samples that demonstrate creativity, organization, and initiative in delivering words from authors to readers in any medium.(e.g., off-prints, etc.). Previously published, single authored work will be accepted. Writing samples should demonstrate mastery of basic craft and represent your best work regardless of whether or not it has been published.

- You will be asked to upload your writing samples and optional material such as a C.V. or resume in one of the following supported file types: PDF, DOC, DOCX, RTE, or TXT.

Note: Graduate Record Examination (GRE) scores are not required for admission to the M.A. in Writing or the M.S. in Writing program.

Degree Requirements

For technical/professional writing and book publishing, the department requires a minimum of 28 graduate credits in writing. The remainder of the student’s program may, with the approval of the advisor, include coursework in fields related to writing.

In every case, the student’s program must

be approved by the advisor and the Chair of the M.A./M.S. in Writing Committee. The student will choose between two tracks: technical/professional writing and book publishing.

Technical and Professional 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, ISQA).

Students will be required to submit a final project in addition to completing their course work. This project typically will be a portfolio of their work demonstrating competence at a professional level but, with advisor approval, may be a single, substantive work.

Note: core courses include Management 550, Organizational Management, or an alternate advisor-approved business course, which are offered through the School of Business Administration. Students may substitute WR 560: Introduction to Book Publishing for Management 550.

Electives include seminars and workshops on a variety of topics. Writers are encouraged to supplement their core courses in technical/professional writing with electives from creative writing, nonfiction writing, or literature. Advisor-approved courses from outside the department may also count as electives.

Note: the M.S. option does not require students to demonstrate proficiency in a language other than English. In cases where a student does opt to demonstrate proficiency in a language other than English, the M.A. in Writing: Technical and Professional Writing will be awarded.

Core Courses 16 Credits

Wr 525 Advanced Technical Writing
Wr 526 Document Design
Wr 527 Technical Editing
Mgmt 550 Organizational Management OR Wr 560 Introduction to Book Publishing (may also be replaced with an alternate graduate business course with advisor approval).

Electives 16 Credits

Wr 504 Internship (Credit TBA)
Wr 505 Writing and Conference (Credit TBA)
Wr 510 Selected Topics in Writing (4) (Topics vary, including, e.g., Technical Publications Project Management, Writing for Presentations, Information Technology for Writers, Multimedia for PT Writers, Managing Web Communications, International Aspects of PTW, History of Business and Technical Writing, Legal Issues for Technical Writers, Public Relations Writing in Technical Industries, and many others. Consult the Bulletin for each quarter's offerings.)
Wr 529 Writing Computer Documentation (4)
Wr 530 Desktop Publishing (4)

Note: Students needing training in relevant software are encouraged to look for the Wr 510 Trends series offered in Framemaker, RoboHelp, Adobe Creative Suite, and others.

Specialization Tracks

Students will select a specialization track in consultation with the program advisor.

Possible specializations include publications management (e.g., Introduction to Book Publishing, Book Editing, Book Design & Production, Book Marketing, Bookselling, Publications Project Management, PT Editing, Workshops in Publication Technologies, Writing Seminars, Selected Topics, Internship), technical communication (e.g., Writing Computer Documentation, Writing for Presentations, Information Technology for Writers, PT Editing, Writing Seminars, Selected Topics, Internship).

Additional specializations outside of technical/professional writing include nonfiction (i.e., four courses from the nonfiction strand chosen in consultation with the advisor) and creative writing (i.e., four courses from the creative writing strand chosen in consultation with the PTW advisor).

Possible specializations outside the field of writing include business administration (management, marketing/public relations), communication (speech), computer science, environmental sciences and resources, and information systems. Students are encouraged to enhance their professional development by specializing in a series of courses that will create advantages in employment opportunities. Students will identify possible specializations in consultation with the program advisor and with an appropriate faculty advisor from the related discipline.

In consultation with the School of Business Administration, for example, MS advisors have identified the following series of courses that would well serve technical communicators in the workforce:

Mktg 544 Marketing Management
Mktg 548 Product Management & Innovation
Mktg 552 Relationship & Service Marketing
Mktg 555 Technology Marketing
Mgmt 544 Technology Management
Mgmt 545 Managing Technological Innovations
Mgmt 556 Organizational Politics
Mgmt 560 Managerial Responsibility & Public Policy

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 with Advisor's approval. Of the 28 elective credits, candidates are expected to take a total of eight (8) credits working at Ooligan Press in either or both Wr 574 Publishing Studio or Wr 575 Publishing Lab.

The final project, in addition to completing the coursework, will be a portfolio of work demonstrating competence at a professional level, but with advisor approval, may be a single, substantive work. Upon completion and delivery of the final project or port-

16 Credits

folio to the student's orals committee, a topic will be assigned by the student's advisor for a final paper of approximately ten pages to be delivered within 10 days to each member of the committee.

The student will take an oral exam in defense of the final project and final paper. Work included in a portfolio will be representative of that done in each course, and appropriate to it, but may otherwise focus in greater detail on one or more areas of study. For instance, the portfolio may include samples of editorial work, query letters for fiction and nonfiction books, book marketing plans, book design proposals and finished designs, research and writing on issues in contemporary publishing. Other possibilities are negotiable with the assigned graduate advisor in publishing.

Core Courses 20 Credits

Wr 560 Introduction to Book Publishing
Wr 561 Book Editing
Wr 562 Book Design & Production
Wr 563 Book Marketing
Wr 564 Bookselling
Wr 570 Intellectual Property & Copyright Law

Electives

28 credits from other writing courses, from literature courses, or from another discipline.

Students earn eight (8) of their elective credits by participating in the work of Ooligan Press, a small trade publishing house. Students work in groups to review, accept, and edit manuscripts; design the interior and the exterior of books; send books to press; and market the books to booksellers, libraries, and other outlets.

Note: the M.S. option does not require students to demonstrate proficiency in a language other than English. In cases where a student does opt to demonstrate proficiency in a language other than English, the M.A. in Writing: Book Publishing will be awarded.

Courses

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.

Eng 104 Introduction to Fiction (4)

Reading, analysis, and appreciation of significant works of fiction.

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.

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
Shakespeare (4)

Introduces students to the works of Shakespeare.

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 260
Introduction to Women's Literature (4)

Introduction to the texts and contexts of women's literature.

Eng 299
Special Studies (Credit to be arranged.)

Eng 300
Introduction to the English Major (4)
Focuses on methods of textual interpretation. This course provides students with analytical and critical tools necessary for the successful study of English at the upper level. Required for, and, but not restricted to, English Majors. A prerequisite for 400-level English courses, English 300 is also strongly recommended as preparation for all upper-division English classes. Expected preparation: 8 lower-division 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 auteur, formalist, historical, and cultural perspectives. Course may be repeated for credit with different topics.

Eng 306
Topics in Literature and Popular Culture (4)

Study of literary issues in popular culture. Courses taught under this number may examine literature as a popular form (such as detective or romance fiction) and the relationship between literature and popular genres (such as comics or music), or use techniques of literary/textual analysis to analyze forms of popular culture (blogs, music videos, etc.). Course may be repeated for credit with different topics.

Eng 307
Science Fiction (4)

Study of recent science fiction, both novels and shorter fiction by American, European and other writers.

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
Children's Literature (4)

Looks at literary works written for children in their cultural contexts and focuses on changing notions about propriety, education, children's literature, and the very idea of childhood itself.

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)

Norse and Celtic mythologies in medieval texts.

Eng 320, 321
English Novel (4, 4)

The English novel, from its beginnings to the present. Eng 320: From early fictional forms through the 18th century. Eng 321: From the 19th century to the present.

ENG 330
Jewish and Israeli Literature (4)

Introduction to modern Jewish literature in its diasporic and national contexts. Emphasis on the transition from sacred to secular literature; reflection of historical and social realities; development of literatures in Europe and the Middle East.

Eng 331
Introduction to Rhetoric and Composition Studies (4)

Introduction to contemporary issues in rhetoric and composition studies by way of the rhetorical tradition of Greece, the rise of composition in the modern North American university, and their relation to the process-oriented approach to composition which has dominated composition instruction since the 1960's. Focuses are on such perennial issues as the relationship between writing and the self, the link between writing and "content," the relationship of writing to speech and reading, the political dimensions of writing, and the role of the audience in composing.

Eng 332
History of Cinema and Narrative Media I (4)
Surveys the history of cinema and narrative media from the late nineteenth-century moving image through the Second World War.

Eng 333
History of Cinema and Narrative Media II (4)
Surveys the history of cinema and narrative media from the end of the Second World War through the 1970s. Issues will include the impact of postwar artistic and literary movements, postwar consumer cultures, the cold war, new wave movements, television, youth culture, and third cinemas.

Eng 334
Topics in Film Genres and Movements (4)
Study of major aesthetic, cultural, and social movements in film. Course may be repeated for credit with different topics.

Eng 335
Topics in Literature and Film (4)
Study of the interplay between the textual and cinematic presentation: how these media have treated specific historical, social, and cultural phenomena, as well as the ways literature and film have inspired and influenced each other in terms of content, form, and audience. Course may be repeated for credit with different topics.

Eng 340
Medieval Literature (4)
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 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. Same course as BSt 351 and BSt 352 and may be taken only once for credit.

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**Topics in American Literature and Culture (4)**

Studies of various American literatures within the context of American history and culture from colonial period to the present. May be repeated with different topics. Prerequisite: 12 credits in literature.

Eng 368**Literature and Ecology (4)**

Study of the role literature and language play in shaping cultural responses to the nonhuman world.

Eng 369**Asian-American Literature (4)**

Survey of significant texts and contexts of Asian-American culture.

Eng 371**The Novel (4)**

The novel as a literary form, exemplified by works written in languages other than English.

Eng 372**Topics in Literature, Gender, and Sexuality (4)**

Study of representations of gender and sexuality in literature and related cultural forms. May be repeated for credit with different topics. This course is the same as WS 372.

Eng 373**Topics in Literature, Race, and Ethnicity (4)**

Study of representations of racial and ethnic identity in literature and related cultural forms. May be repeated for credit with different topics.

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. Prerequisites: Eng 300. Expected preparation: 8 additional upper division literature credits.

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. Prerequisites: Eng 300.

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. Prerequisites: Eng 300. Expected preparation: 8 additional upper division literature credits.

Eng 415/515**Research Methods in Rhetoric and Composition (4)**

Examines current methodologies used in the field of rhetoric and composition and asks students to design and implement a research project which will add to the cumulative knowledge of the discipline. Prerequisites: junior standing.

Eng 416/516**History of Rhetoric (4)**

Major figures and movements in rhetoric from classical rhetoric to the present. Prerequisites: junior 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 exam-

ines grammatical categories, structures, and terminology; relationships between grammatical structures and punctuation; and prescriptive grammars for written texts. Prerequisites: Eng 300.

Expected preparation: 4 upper division literature/ Writing credits.

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. Course may be repeated for credit with different topics.

Prerequisites: Eng 300. Expected preparation:

Eng 340 and 4 additional upper division literature credits.

Eng 430/530**Advanced Topics in 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.

Course may be repeated for credit with different topics. Prerequisites: Eng 300. Expected preparation: Eng 341 and 4 additional upper division literature credits.

Eng 435/535**Advanced Topics in Film and Media (4)**

Specialized studies in the history, criticism, or theory of film and media culture. Topics may focus on genres, movements, figures, theoretical issues, or advanced historical topics. Prerequisites: Eng 300 or Eng 304.

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. Course may be repeated for credit with different topics. Prerequisites: Eng 300. Expected preparation: Eng 341 or Eng 342 and 4 additional upper division literature credits.

Eng 441/541**Advanced Topics in Renaissance Literature and 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.

Course may be repeated for credit with different topics. Prerequisites: Eng 300. Expected preparation: Eng 341 and 4 additional upper division literature credits.

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. Prerequisites: Eng 300. Expected preparation: Eng 387 and 4 additional upper division literature credits.

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. Prerequisites: Eng 300. Expected preparation: Eng 387 and 4 additional upper division literature credits.

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. Prerequisites: Eng 300. Expected preparation: Eng 387 and 4 additional upper division literature credits.

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. Prerequisites: Eng 300. Expected preparation: 8 additional upper division literature credits.

Eng 448/548**Major Figures in Literature (4)**

Concentrated study of the canon of one or more major writers: for example, Chaucer, The Brontës, James Joyce, Hemingway and Fitzgerald. Prerequisites: Eng 300. Expected preparation: 8 additional upper division literature credits.

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. Prerequisites: Eng 300. Expected preparation: 8 additional upper division literature credits. Course may be repeated with different topics.

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. Course may be repeated for credit with different topics. Prerequisites: Eng 300. Expected preparation: Eng 342 and 4 additional upper division literature credits.

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). Course may be repeated for credit with different topics. Prerequisites: Eng 300. Expected preparation: Eng 342 and 4 additional upper division literature credits.

Eng 460/560**Advanced Topics in American Literature to 1800 (4)**

Advanced historical study of major figures and movements in American literature to 1865. Course may be repeated for credit with different topics. Prerequisites: Eng 300. Expected preparation: Eng 360 and 4 additional upper division literature credits.

Eng 461/561**Advanced Topics in 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 Web site and/or an adviser. Course may be repeated with different topics: maximum of 8 hours to be applied to master's degree. Prerequisites: Eng 300. Expected preparation: Eng 360 and/or 363 and 4 additional upper division literature credits.

Eng 464/564**Advanced Topics in 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 Web site and/or an adviser. Course may be repeated with different topics: maximum of 8 hours to be applied to master's degree. Prerequisites: Eng 300. Expected preparation: Eng 363 and 4 additional upper division literature credits.

Eng 467/567**Advanced Topics in American Literature and Culture (4)**

Interdisciplinary thematic studies of American literature and culture. Course may be repeated with different topics: maximum of 8 credits to be applied to master's degree. Prerequisites: Eng 300. Expected preparation: 8 additional upper division literature credits.

Eng 469/569**Advanced Topics in 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. Prerequisites: Eng 300. Expected preparation: Eng 369 and 4 additional upper division literature credits.

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. Course may be repeated for credit with different topics. Prerequisites: Eng 300. Expected preparation: Eng 344 and 4 additional upper division literature credits.

Eng 477/577, 478/578**American Poetry (4, 4)**

Tradition and innovation in American poetry from the beginnings to the mid-20th century. Prerequisites: Eng 300. Expected preparation: 8 additional upper division literature credits.

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. Course may be repeated for credit with different topics. Prerequisites: Eng 300. Expected preparation: Eng 345 and 4 additional upper division literature credits.

Eng 484/584**Modern Drama (4)**

Examines major European, English, and American plays in the period 1880-1940. Prerequisites: Eng 300. Expected preparation: 8 additional upper division literature credits.

Eng 485/585**Contemporary Drama (4)**

Examines major developments in world drama since World War II. Prerequisites: Eng 300. Expected preparation: 8 additional upper division literature credits.

Eng 486/586**Contemporary American Novel (4)**

American novel since 1965, with emphasis upon traditions, themes and trends. Prerequisites: Eng 300. Expected preparation: 8 additional upper division literature credits.

Eng 487/587**Contemporary American Short Story (4)**

The American short story from mid-20th century to the present. Prerequisites: Eng 300. Expected preparation: 8 additional upper division literature credits.

Eng 488/588**Contemporary American Poetry (4)**

Study of significant trends in contemporary American poetry and poetics. Prerequisites: Eng 300. Expected preparation: 8 additional upper division literature credits.

Eng 490/590**Advanced Topics in Rhetoric and Composition Studies (4)**

Examines particular figures, theories, issues, movements, and historical-cultural contexts in both contemporary and historical studies in rhetoric and composition. May be repeated for credit with different topics. Prerequisites: Eng 300. Expected preparation: 8 adviser-approved credits in literature, philosophy, speech, and/or writing.

Eng 491/591**History of Literary Criticism and Theory I (4)**

Examines the history of Western critical approaches to language and literature from ancient traditions through the Enlightenment. Prerequisites: Eng 300. Expected preparation: 8 upper-division credits in literature.

Eng 492/592**History of Literary Criticism and Theory II (4)**

Examines the history of Western critical approaches to language and literature from the mid-nineteenth century to the present. Prerequisites: ENG 300. Expected preparation: 8 upper-division 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. Course may be repeated for credit with different topics. Prerequisites: Eng 300. Expected preparation: Eng 492 and 4 additional upper division literature credits

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. Course may be repeated for credit with different topics. Prerequisites: Eng 300. Expected preparation: Eng 492 and 4 additional upper division literature credits.

Eng 498/598

Ecology, Criticism, and Culture (4)

Examines ecological perspectives on the study of literature, culture, and critical theory, as well as how the methods of literary and cultural studies illuminate environmental issues and problems of sustainability. Prerequisites: Eng 300.

Eng 500

Problems and Methods of Literary Study (4)

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.

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 (1)

Introduces and develops the theoretical and practical expertise of the graduate teaching assistant in the area of college composition teaching. May be taken up to three times for credit. Prerequisite: appointment to teaching assistantship in English Department.

Eng 519

Advanced College Composition Teaching (1)

Continues the development of the theoretical and practical expertise of the graduate teaching assistant in advanced areas of college composition teaching. May be repeated up to three times for credit. Required prerequisite: appointment to 2nd year teaching assistantship in English Department.

Eng 531

Topics in English Studies (1)

Examines various theories, history, scholarship, pedagogy, and professional development in the field of English Studies. Topics always differ each term. May be repeated for up to six credits.

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.

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 210

Grammar Refresher (2)

A writing course for students who wish to refresh their grammar skills. Using informal and formal writing, it focuses on parts of speech, sentence construction, and punctuation; tracking particular grammar problems; and learning to edit.

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. May be repeated once for a total of 8 credits. 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. May be repeated twice for a total of 12 credits. Recommended: Freshman Inquiry.

Wr 214

Introductory Nonfiction Writing (4)

An introduction to writing with the major forms and techniques of literary nonfiction. Beginning with exercises in foundational skills such as description, reportage and the crafting of personal narrative, students will write and respond to short works of creative nonfiction. May be repeated once for a total of 8 credits. Expected preparation: Freshman Inquiry or equivalent.

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. May be repeated once for a total of 8 credits.

Wr 300

Topics in Composition (4)

Issues in composition. Includes such topics as writing and critical reasoning, writing with technology, and writing in the disciplines. May be repeated for credit with different topics.

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 a total of 8 credits. 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 a total of 8 credits. 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 strategies, 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 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 400/500

Advanced Topics in Composition (4)

Examines a variety of advanced issues in composition. Includes such topics as writing and healing and writing with technology. May be repeated for credit with different topics. Prerequisites: junior standing.

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. May be repeated once for a total of 8 credits. 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. May be repeated once for a total of 8 credits. 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 once for a total of 8 credits.

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 once for a total of 8 credits. Does not fulfill MFA requirements.

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 collaborative 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 435/535

Grammar for Writers (4)

Study of grammar that focuses on writing that reads well aloud. Topics include: editing written work for rhythm, meter, emphasis, and balance; translating prose or poetry; and writing speeches, letters, and other forms of communication. Provides background for students in upper-division and graduate programs that require writing and editing skills. Prerequisite: senior or graduate status.

Wr 456/556

Forms of Nonfiction (4)

Explores various forms of nonfiction, including essay, personal essay, reviewing, immersion journalism, and memoir, with practice writing in each. Prerequisites: Wr 214 or Wr 228. Instructor approval required.

Wr 457/557

Personal Essay Writing (4)

The history and contemporary use of personal essay as a mode of creative communication; gives an understanding of and practice in this kind of writing. Prerequisites: Wr 214 or Wr 228. Instructor approval required.

Wr 458/558

Magazine Writing (4)

Examines the development of both long- and short-form magazine pieces, as well as the business and economics of magazine publishing. Students write and peer-critique articles in the styles and formats of a variety of publications and magazine departments. Prerequisites: Wr 214 or Wr 228. Instructor approval required.

Wr 459/559

Writing the Memoir (4)

Concentrates on elements necessary for writing successful personal narrative, including structure, tone/voice, dialogue, characterization, tense, and point-of-view. Memoir models, both short pieces and book-length memoirs will be read and discussed and students will turn in several pieces over the course of the term for workshop discussion. Prerequisite: Wr 214 or Wr 228. Instructor approval required.

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 bookselling. 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 bookselling. 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 471/571

Publishing Software (4)

Provides a strong base in the software used in the book publishing industry, focusing on Adobe InDesign. Also explores Adobe Photoshop, Illustrator, and Acrobat, as well as XHTML and e-book design. The class considers audience expectations through a range of hands-on design projects. Prerequisites: Wr 300 or Wr 312 or Wr 313 or Wr 323 or Wr 324 or Wr 327 or Wr 328 or Wr 330 or Wr 333 or Wr 394 or Wr 399.

Wr 472/572

Copyediting (4)

Learn how to improve the clarity, coherency, consistency, and correctness of other people's writing through application of grammatical and stylistic guidelines. Study grammar, usage, punctuation, and style. Narrow focus on editing at the line and substantive level, with little to no attention given to broad development of a manuscript. Prerequisites: Wr 300 or Wr 312 or Wr 313 or Wr 323 or Wr 324 or Wr 327 or Wr 328 or Wr 330 or Wr 333 or Wr 394 or Wr 399.

Wr 473/573

Developmental Editing (4)

Explores the relationship between an editor, a writer, and the work in the process of developmental editing—also known as global, substantive, or comprehensive editing. Examines historically significant editor/author relations, how the editorial process and relationships have changed over time, and how editorial expectations shift based on the expectations of the publisher, the constantly changing global marketplace, and the introduction of new technologies. Prerequisites: Wr 300 or Wr 312 or Wr 313 or Wr 323 or Wr 324 or Wr 327 or Wr 328 or Wr 330 or Wr 333 or Wr 394 or Wr 399.

Wr 474/574

Publishing Studio (4)

Perform the work of a real publishing house, from acquiring manuscripts to selling books. Gain publishing experience by participating in the various departments of a student-staffed publishing house, Ooligan Press. Departments include Acquisitions, Editing, Design and Sustainable Production, Marketing, External Promotions, Sales, Digital Content, Social Media, and Project Management and Operations. Prerequisites: Wr 300 or Wr 312 or Wr 313 or Wr 323 or Wr 324 or Wr 327 or Wr 328 or Wr 330 or Wr 333 or Wr 394 or Wr 399.

Wr 475/575

Publishing Lab (4)

Perform the work of a real publishing house, from acquiring manuscripts to selling books. Gain publishing experience by participating in the various departments of a student-staffed publishing house, Ooligan Press. Departments include Acquisitions, Editing, Design and Sustainable Production, Marketing, External Promotions, Sales, Digital Content, Social Media, and Project Management and Operations. Prerequisites: Wr 300 or Wr 312 or Wr 313 or Wr 323 or Wr 324 or Wr 327 or Wr 328 or Wr 330 or Wr 333 or Wr 394 or Wr 399.

Wr 476/576

Publishing for Young Adults (4)

Study the techniques commonly deployed by writers and publishers of young adult and middle grade literature. Prerequisites: Wr 300 or Wr 312 or Wr 313 or Wr 323 or Wr 324 or Wr 327 or Wr 328 or Wr 330 or Wr 333 or Wr 394 or Wr 399.

Wr 477/577

Children's Book Publishing (4)

Study the techniques commonly used by writers and publishers of children's literature.

Prerequisites: Wr 300 or Wr 312 or Wr 313 or Wr 323 or Wr 324 or Wr 327 or Wr 328 or Wr 330 or Wr 333 or Wr 394 or Wr 399.

Wr 478/578

Publications Management (4)

Learn about the traditional business model of book publishing and how that model is changing. Study profit and loss, inventory, negotiation, and other topics fundamental to running a publishing house. Covers both theory and real-world applications. Prerequisites: consent of instructor.

Wr 513

Fiction Writing (4)

An intense course for writers who are currently embarked on a project involving the writing of fiction, whether short story, novella, or novel. Expected preparation: Wr 212, 312, 412 or their equivalents. May be repeated for credit. 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. Consent of instructor required.

Wr 521

MFA Core Workshop in Fiction (4)

The graduate workshop in fiction focuses on the writing, revision, and critical discussion of student short stories and chapters from novels. Students' critical analyses of their peers' work are informed by their study of published fiction in the texts, supplemented by lectures clarifying technical strategies in the writing of fiction. This course is restricted to graduate students admitted to the writing program. Preference given to students working in this genre. May be taken six times for a total of 24 credits in fiction.

Wr 522

MFA Core Workshop in Poetry (4)

The graduate workshop in poetry focuses on the writing, revision, and critical discussion of student poems. Students' verbal and written critical analyses of their peers' work are informed by their reading of published poems representing a range of formal strategies and historical and cultural contexts, and by their reading in prosody and poetics. This course is restricted to graduate students admitted to the writing program in poetry. May be taken six times for a total of 24 credits.

Wr 523

MFA Core Workshop in Nonfiction Writing (4)

This course, restricted to graduate students admitted to the writing program in nonfiction, will concentrate on elements necessary for writing successful nonfiction prose—including structure, voice, dialog, characterization, and point-of-view—with a primary emphasis on the in-class workshop and peer review of student pieces. Nonfiction models, both short pieces and book-length, will be read and discussed, and students will write critical responses regarding those models. Instructor approval required. May be taken six times for a total of 24 credits.

Environmental Science and Management

218 Science Building II
725-4982

www.pdx.edu/esm/

B.A., B.S. in Environmental Science
B.A., B.S. in Environmental Studies
Minor in Environmental Studies
Minor in Sustainability
Certificate in Hydrology
M.S., M.E.M.
Ph.D.

Environmental science and management is the study of the interactions between society and the physical, chemical, ecological, and biological processes that structure and maintain ecosystems. Our work is critical to understanding and developing sustainable ecosystems, human societies, and economies. Environmental Science and Management at PSU focuses on processes that link terrestrial, urban and aquatic ecosystems, consequences of human alteration of those linkages, and development of policies to manage human interaction with the environment. We conduct our research by studying organisms and specific linkages and processes across systems and by studying interactions between organisms, processes, and linkages in a specific ecosystem or watershed, such as the Columbia River Basin. The Department of Environmental Science and Management prepares students to develop the skills and interdisciplinary understanding to be scholars and managers of human interaction with, and impact on, environmental systems.

The Department of Environmental Science and Management cooperates with several departments and centers, including the departments of Anthropology, Biology, Chemistry, Civil Engineering, Economics, Geography, Geology, History, Mathematics, Physics, Political Science, Sociology; and the School of Business Administration and the College of Urban and Public Affairs. Environmental Science and Management Department is in the School of the Environment.

Undergraduate program

The Department of Environmental Science and Management offers two undergraduate degrees. The Environmental Science degree

is focused on natural science, whereas the Environmental Studies degree is focused more on policy and management. The B.A./B.S. degrees in both Environmental Science and Environmental Studies 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 should consult with a department adviser to assure proper course planning. Students can complete field experiences by working on projects in the University, metropolitan community, and region.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 for more information.

Degree requirements

Requirements for major in Environmental Science. In addition to satisfying general University requirements (45 credits), a student majoring in environmental science must complete at least 51 credits of environmental science core courses and must meet department requirements for foundation courses (49-50 credits), and supporting elective courses (connected learning electives) in science, social science, and humanities (16 credits).

All courses used to satisfy the Environmental Science major requirements, whether taken in the department or in other departments, must be graded C- or above. Department 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 (ESM 320, 321, 322). Of the 16 credits of 400-level courses required in the core, a maximum of 4 credits may be taken as ESM 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 Economics of Environmental Issues	4
G 201, 204 or 202, 205 Geology or Ph 201, 214 or Ph 211, 214, Physics or Geog 210 Physical Geography.....	4-5
Mth 251, 252 Calculus I, II	8
Stat 243 Introduction to Probability and Statistics I and Stat 244 Introduction to Probability and Statistics II.....	8
OR	
Stat 243 Introduction to Probability and Statistics I and ESM 340 Research Methods in Environmental Science.....	8
Total	49-50

Core Courses	Credits
ESM 220 Introduction to Environmental Systems..	4
ESM 221 Applied Environmental Studies: Problem Solving	4
ESM 222 Applied Environmental Studies: Policy Considerations.....	4
ESM 320, 321 Analysis of Environmental Systems I, II.....	8
ESM 323, 324 Environmental Systems Laboratory I, II.....	4
ESM 322 Environmental Risk Assessment.....	4
ESM 325 Environmental Risk Assessment Lab.....	2
ESM 335 Intro to Environmental Mgmt	4
ESM 407 Environmental Seminar.....	1
*ESM 410-499 Advanced Environmental Topics ..	16
Total	51

*ESM 404 can be substituted for 4 credits of the ESM 410-499 requirement.

Connected learning electives. Students must complete 16 credits of supporting courses selected from an approved list of courses available on the department Web site www.pdx.edu/esm/. 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.

Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling major requirements. Additional courses may be required as prerequisites. All courses used to satisfy the Environmental Science major requirements, whether taken in the department or in other departments, must be graded C- or above.

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	
ESM 222 Applied Environmental Studies: Policy Considerations.....	4
ESM 320, 321 Analysis of Environmental Systems I, II.....	8
ESM 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 in environmental science and management, economics and geography. Environmental science courses (minimum 8 credits) include selected upper-division courses from environmental science. A list of approved courses is available from the Environmental Science office and the department website.

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. Only grades of C- or above count toward satisfying the minor requirement.

Requirements for major in Environmental Studies. The Department of Environmental Science and Management and the Department of Geography are collaborating to offer a degree in Environmental Studies. The degree prepares the students for more sophisticated upper division courses at the interface between science and policy by requiring them to take some prerequisite courses in natural sciences (biology, chemistry and physical geography) and some prerequisite courses in the social sciences (geography, economics and environmental policy).

A summary of the requirements are listed below:

- 29-31 credits in natural sciences in the subjects of ecology, chemistry, environmental systems, and physical geography
- 24 credits in social sciences and humanities in the subjects of resource management, economics, environmental policy and regulations, and others
- 21 credits from a list of "skills" that includes quantitative analysis, visualization of spatial data, field methods, and others
- 16 credits in an identified topical area. Choices include environmental systems, urban issues, resource management,

nature/society interactions, or environmental education

There is a minimum of 90 credits required for this major.

Core Courses: Credits

Natural Sciences Core Courses	
Biology – 8 credits in one of the following sequences	8
Bi 252, 253: Principles of Biology or Sci 341, 342: Biology Concepts and Applications	
Chemistry – 8 credits (two quarters or one semester)	8
ESM 230: Fundamentals of Environmental Chemistry I, and ESM 231: Fundamentals of Environmental Chemistry II.	
Environment Science.....	8
ESM 220: Introduction to Environmental Systems and ESM 221: Applied Environmental Studies: Problem Solving	
Physical Geography	4
Geog 210: Physical Geography	
Senior Seminar	
ESM 407: Environmental Seminar.....	1
Total	29-31

Social Sciences and Humanities Core Courses	
Human Geography/Management	8
Geog 230: Environment and Society: Global Perspectives and Geog 345: Resource Management	
Environmental Economics	4
Ec 332: Economics of Environmental Issues or equivalent	
Environmental Policy/Regulations	8
ESM 222: Applied Environmental Studies: Policy Considerations; and	
ESM 335: Intro to Environmental Management	
4 credits from the following list of courses:	4
ESM 330: Environmental and Ecological Literacy, PS 319: Politics of the Environment, Phl 310: Environmental Ethics , Hst 339: The Environment and History, Geog 347: Environmental Issues and Action	
Total	24

Skills: Students must take a total of 21 credits of skill courses, including the following:

Quantitative Analysis – 4 credits from this list:	4
Stat 243: Introduction to Probability and Statistics I, Sci 314: Environmental Statistics, Geog 496: Visualization of Spatial Data, Geog 497: Spatial Quantitative Analysis, ESM 340: Research Methods in Environmental Science	
Visualizing Spatial Data.....	9
Geog 380: Maps and Geographic Information and Geog 488: Geographic Information Systems I: Introduction	
Field Methods – 4 credits from this list:	4
Bi 473: Field Sampling; Geog 420: Field Methods in Physical Geography ; ESM 342: Field Methods; Geog 489: Building GIS Database with GPS; Geog 425: Field Methods in Human Geography	
Communications – 4 credits from this list:	4
Geog 495: Maps, Models and GIS, Wr 327: Technical Writing, Geog 481: Satellite Image Processing, Geog 485: Map Design and Production	
Total	21

Topical Areas: Students must take at least 4 courses from one area of Topical Areas. 16

These "Topical Area" lists will be reviewed and modified by the degree oversight committee (consisting of a member from each department) on an annual basis. The intent of these lists is to help students and their adviser select an appropriate set of courses to meet the student's educational goals. For a complete table of approved courses, see the ESM website.

Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling major requirements. Additional courses may be required as

prerequisites. All courses used to satisfy the Environmental Studies major requirements, whether taken in the department or in other departments, must be graded C- or above.

*Any course taken to meet the core content requirement cannot be used to meet the topical area requirement.

The Honors Track in Environmental Science or Environmental Studies will allow outstanding undergraduate students to obtain recognition for exceptional performance in coursework and research. Students will gain real life experience that will assist them when applying to graduate school and/or for a professional career position. Acceptance into the ESM Honors Track gives students an opportunity to work closely with a faculty mentor and the graduate students in his/her lab. In addition, participation in the Honor's Track strengthens the student's resume and provides them access to professional networking contacts.

This program is designed for upper division ESM majors who wish to deepen their knowledge base in a particular area of interest. Under the guidance of an assigned faculty advisor, participants will identify a research project that will include readings, field or lab work, and a thesis. For additional information about the ESM Honors Track, please visit the department website.

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
ESM 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

Ec 332 Economics of Environmental Issues (4)	
Ec 444 Economics of Green Power (4)	
Ec/ESM 433 Natural Resource Economics (4)	
Ec/ESM 434 Business Environmental Management Economics (4)	
Ec/ESM 443 Global Environmental Economics (4)	
USP 490 Green Economics and Sustainable Development (3)	
Ec 430 Resource and Environmental Economics (4)	

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)
- Phl 310 Environmental Ethics (4)
- Geog 465/565 Tuscany: Sustainability in City and Country (4)
- Geog 442 Sustainable Cities (4)

Environmental Systems

- ESM 355 Understanding the Environment (4)
 - ESM 356 Understanding Environmental Conservation (4)
 - ESM 420 Ecological Toxicology (4)
 - ESM 424 Wetland Ecology and Regulations (4)
 - ESM 426 Ecology of Stream and Rivers (4)
 - ESM 428 Urban Ecology (4)
 - ESM 445 Old-Growth Forest Ecology (4)
 - ESM 460 Air Quality (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

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. Only grades of C- or above count toward satisfying the minor requirement.

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. Only grades of C- or above count toward satisfying the minor requirements.

Graduate programs

The Environmental Science and Management (ESM) 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 systems, ecological systems and management. Areas of primary specialization are terrestrial, urban and aquatic ecology as they relate to human impacts and management. ESM offers the Masters of Science and (MS) and the Masters of Environmental Management (MEM) degrees. The Department also participates in the Earth, Environment, & Society Ph.D. degree in the School of the Environment, see page 198.

The following procedures are designed to assure that the student is qualified to pursue

both the program itself and a successful career in environmental science and management.

Admission requirements

Master of Science and Master of Environmental Management. In addition to the instructions for admission to the university graduate program, ESM 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, statistics, physics, and mathematics (including differential and integral calculus) approximately equivalent to the foundation course requirements for undergraduate students in environmental science.
4. One official transcript from every college or university attended, including junior colleges and community colleges.
5. Statement of Interest
6. Current resume or CV
7. Identification of advisors

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 Science and Management; admission is contingent on the availability of department resources and the identification of an appropriate adviser for each student.

Degree requirements

University master's degree requirements must be met. In addition, 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. The major adviser and one other committee member must be a member of the graduate faculty. The graduate committee must be approved by the ESM Chair.

To encourage the development of interdisciplinary graduate study programs, guidelines for course selection are flexible. Students must complete at least 45 graduate credits.

The M.S. program of study consists of the following minimum credit requirements:

Credits

- Core courses (one from each core area and selected from program list)..... 16
- ESM 507 Seminar (three terms)..... 3

- Quantitative analysis (selected from program list) 4
- Area of concentration 12
- Elective and supporting courses 4
- Thesis/project..... 6

Total 45

The M.E.M. program of study consists of the following minimum credit requirements:

Credits

- Core courses (one from each core area and selected from program list and ESM 551)..... 16
- ESM 507 Seminar (three terms)..... 3
- Quantitative analysis (selected from program list) 4
- Area of concentration 12
- Elective and supporting courses 4
- Thesis/project..... 6

Total 45

Core courses. Core courses are required in physical environmental processes, ecological processes and environmental management for all master's students. M.E.M. students must also complete a core course in project management. Lists of approved core courses are available from the ESM office or online at <http://www.pdx.edu/esm>.

Quantitative analysis. A course in research methods, experimental design, or statistical analysis, is required to ensure students have sufficient skills for environmental research.

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, which 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. M.E.M. students will take: 1 unit of ESM 509 Practicum at the beginning of their program, and 5 units of ESM 506. This project is expected to be the product of original work in cooperation with 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.

Courses

Courses with an asterisk (*) are not offered every year.

- ESM 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.

ESM 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.

ESM 199**Special Studies (Credit to be arranged.)****ESM 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. Expected preparation: Stat 243 (may be taken concurrently).

ESM 221**Applied Environmental Studies: Problem Solving (4)**

Environmental sampling, Sampling design, and measurement. Recommended prerequisites: ESM 220; Stat 243.

ESM 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: ESM 220 and 221.

ESM 230, 231**Fundamentals of Environmental Chemistry I, II (4, 4)**

Basic concepts and principles of chemistry as it applies to environmental problems. This will include, the nature of matter and chemical reactions, water chemistry, water pollution, atmospheric chemistry, soil chemistry, toxicological chemistry and industrial ecology. Examples will be used that illustrate the social and economic importance of environmental chemistry.

ESM 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.

ESM 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: ESM 320.

ESM 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, ESM 222, ESM 321.

ESM 323**Environmental Systems Laboratory I (2)**

Laboratory work to accompany Environmental Systems I (ESM 320). One 4-hour laboratory period. Requires concurrent enrollment in ESM 320.

ESM 324**Environmental Systems Laboratory II (2)**

Laboratory work to accompany Environmental Systems II (ESM 321). One 4-hour laboratory period. Requires concurrent enrollment in ESM 321.

ESM 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: ESM 321, 322, 324.

ESM 330**Environmental and Ecological Literacy (4)**

Introduces a broad range of thought about ecology and the environment, including supporters and critics such as Aldo Leopold, David Orr, Bjorn Lomborg, E.O. Wilson and Thomas Berry. Addresses the idea of ecological literacy as a key aspect in education and understanding the environment. Recommended prerequisites: ESM 220, 221, and 222.

ESM 335**Introduction to Environmental Management (4)**

Course will focus on environmental project management. Survey of agencies and entities that currently do management and under what authority. Introduction to general theory of environmental management and strategies that are being used. Case studies of local management project and issues. Prerequisite: ESM 222.

ESM 340**Research Methods in Environmental Science (4)**

Integrates quantitative skills into environmental research. Introduces research methods commonly used in environmental studies with emphasis on environmental study designs, data analyses, and data interpretations.

ESM 342**Field Methods (2)**

Presents crucial safety, field and research skills for environmental research. Presents different skill sets for different types of field work for example in lakes, wetlands, forests or marine environments. Students may count two sections of this class toward an Environmental Science or Environmental Studies major. (May be taken twice).

ESM 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 function, earth and Northwest resource issues and processes, biodiversity, human population dynamics, as well as the roles of science, society, economics, technology and ethical environmental sustainability. Not intended for science majors.

ESM 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 natural resources issues with a focus on nature's services, the global crisis in water, biodiversity, and food; soil function, the fate of environmental toxins and public health, climate change, alternative energy, as well as ethics, governance, regulatory compliance, and community understanding. Not intended for science majors. Expected preparation: Unst 224 or ESM 355.

ESM 399**Special Studies (Credit to be arranged.)****ESM 401****Research (Credit to be arranged.)**

Consent of instructor and program director.

ESM 404**Cooperative Education/Internship (Credit to be arranged.)****ESM 405****Reading and Conference (Credit to be arranged.)****ESM 407****Environmental Seminar (1)**

Weekly seminar series involving student-led discussion of topical environmental issues. May be repeated for up to 3 credits.

ESM 410**Selected Topics (Credit to be arranged.)**

Consent of instructor.

ESM 418/518**Landscape Ecology (4)**

Examines the structure, function, and change of natural and human-modified communities at the scale between individual communities and regional biomes. Focuses on spatial patterns and processes as they relate to the patch mosaic of interacting ecological communities. Expected preparation: Geog 313 or Bi 357. Upper-division standing required. This course is the same as Geog 418/518 and may be taken only once for credit.

ESM 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.

ESM 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.

ESM 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.

ESM 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.

ESM 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 221.

ESM 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.

ESM 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.

ESM 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.

ESM 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.

ESM 443/543**Global Environmental Economics (4)**

An examination of the economic forces and theories to understand the causes of global environmen-

tal 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.

ESM 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.

ESM 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: ESM 320, 321, 322.

ESM 460/560**Air Quality (4)**

An overview of urban air quality issues facing cities in the US and globally. Examine effects of air pollution on public health and environment, as well as technologies and regulatory practices. Review pollution measurement and modeling techniques. Recommended prerequisite: ESM 320.

ESM 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.

ESM 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; ESM 321 or Bi 357.

ESM 475/575**Limnology and Aquatic Ecology (4)**

Encompasses biological, physical, geological, and chemical aspects of freshwater environments. Overview of lake ecosystems, emphasizing fundamental interactions, processes, and ecology, as well as an appreciation of the impact of human activities on these waterbodies. A field trip is required. Prerequisites: ESM 321 or Bi 357. Expected preparation: Ch 223.

ESM 477/577**Limnology Laboratory (2)**

Techniques in field and laboratory analysis of freshwater systems. Recommended pre- or corequisite: ESM 475/575.

ESM 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.

ESM 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; multiphase 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.

ESM 480/580**Coastal Marine Ecology (4)**

Introduces the relationships between marine species and their environment, intra- and inter-specific interactions, and factors structuring marine communities. Community structure and distribution presented in the context of both oceanography and coastal zone ecology. Marine conservation issues, including fisheries, addressed. A field trip required. Recommended prerequisite: ESM 321.

ESM 483/583**Marine Conservation and Management (4)**

This course will be divided into three sections. We will begin by discussing the state of the oceans, and ecological differences between marine and terrestrial/aquatic systems. The second part of the course will discuss the major threats to ocean systems. The third part of the course will focus on solutions in terms of protected areas, management and policy strategies, and various aspects of the human dimension. Recommended prerequisite: ESM 335.

ESM 485/585**Ecology and Management of Bio-Invasions (4)**

Invasive, or nonindigenous, species present us with global ecological and economic problems and have been ranked as second only to habitat destruction as a threat to our natural areas and native species. These invasive species are a concern because they restructure ecosystems, affect the evolutionary trajectory of native species, lead to the extinction of species, and impact local industries. Recommended prerequisite: ESM 321.

ESM 501**Research (Credit to be arranged.)**

Consent of instructor and program director.

ESM 503**Thesis (Credit to be arranged.)**

All aspects of research and thesis writing for master's students.

ESM 504**Cooperative Education/Internship (Credit to be arranged.)****ESM 505****Reading and Conference (Credit to be arranged.)****ESM 506****Special Projects (Credit to be arranged.)**

ESM 507**Seminar (1)**

Weekly seminar series on topical environmental issues. May be repeated for up to 3 credits for M.S. or M.E.M students.

ESM 509**Practicum (Credit to be arranged.)****ESM 510****Selected Topics (Credit to be arranged.)**

Consent of instructor.

ESM 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.

ESM 551**Project Management for Scientists (4)**

Managing a science or environmental project is unique, requiring knowledge of the science discipline, project management, public participation and regulatory requirements. Topics include: defining project and tasks; understanding client or internal needs; establishing project organization, staffing, costs; public participation; satisfying regulatory requirements; adaptive management. Group work using case studies included.

ESM 552**Environmental Regulation and Non-regulatory Approaches (3)**

Understanding environmental regulations and the interaction between governmental agencies and business is critical. Course provides basics of major environmental regulations, how local, state and the federal governments are responding to regulatory issues, and interaction with businesses through innovation and performance based approaches. Case studies and group work included.

ESM 555**Science Communication (1)**

Students will outline the objectives involved in presenting scientific information to different audiences, including the role of the speaker, visual presentation of data, written and mixed media. This is the same course as ESR 655 and may be taken only once for credit.

ESM 556**Advanced Science Communication Skills (1)**

Students will explore more advanced topics on presentation and proposal preparation. All students will prepare a mocked up poster based on cognitive and graphic design principles. They will create an extended outline for a research proposal. Peers in class will critique posters and proposals. Prerequisites: G 610 Writing Skills or ESM 555. This is the same course as ESR 656 and may be taken only once for credit.

ESM 557**Science, Media and the Public: Working with the Media to Create Effective Scientific Messages (1)**

Scientists need to explain their studies to the public through mass media. Topics include; audience, different media, the reporters' process, editor's view of science stories, and how inaccuracies get perpetuated. Students will evaluate a wide variety of mass media materials, interview practice, and guests' description of various media. Prerequisites: graduate standing or permission of instructor. This is the same course as ESR 657 and may be taken only once for credit.

ESM 566/666**Environmental Data Analysis (4)**

Same as CE 566/666. Course may only be taken once for credit.

ESM 567**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 science. Emphasis is on ordination and

cluster analysis. Prerequisite: one college-level statistics course.

ESM 570**Environmental Education (4)**

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.

ESM 588**Environmental Sustainability (4)**

Sustainability in natural and human-influenced ecosystems, with a focus on processes of regeneration, maturity, collapse and renewal. Topic areas include natural provisioning of ecosystem services, processes of change in ecological systems, interactions among ecological and social systems, economic valuation of ecosystem services, and ecosystem management.

ESM 590/690**Ecosystem Services and Sustainability: Developing a Toolkit (1)**

Ecosystem services provide a conceptual framework for addressing ecological, social and economic sustainability. Students will learn to use an interdisciplinary toolbox of methods and techniques useful for assessing various aspects of ecosystem services. Students will develop a project proposal on a real-world application of ecosystem services assessments and valuation.

ESM 591/691**Ecological Concepts of Ecosystem Services (4)**

Interdisciplinary course and field work. Provides a conceptual framework for addressing ecological, social and economic sustainability. Examining shifts in ecosystem services across a gradient from natural to built environments. Student project proposals examine real-world problem or question measuring or evaluating ecosystem services. Collaboration with community partner organizations and agencies.

Geography

424 Cramer Hall**725-3916****www.geog.pdx.edu/**

B.A., B.S.

Minor

Minor in GIS

Secondary Education Program-Social Science

M.A., M.S.

Graduate Certificate in GIS

M.A.T. and M.S.T. (General Social Science)

Ph.D.—School of the Environment

Undergraduate programs

The Geography Department at Portland

State University links environmental studies and cultural studies in a program centered on environmental issues, social and cultural landscapes, sustainability in urban and natural areas, and Geographic Information Science. Coursework emphasizes systematic and regional approaches to understanding the physical environment and human-environment interactions. Techniques classes (in GIS, remote sensing, cartography, and spatial analysis) provide the tools to analyze complex local, regional, and global phenomena. Access to the Pacific Coast and the Cascade Mountains provides ample opportunity for fieldwork-based classes and opportunities for research. The PSU Department of Geography is an excellent choice for undergraduate and graduate students with interests in the linkages between human and

natural systems.

Faculty engage in local, regional, and international research projects in hydrology, water resources, biogeography, sustainable development, land use analysis, climate change, cultural ecology and cultural landscapes, the urban environment, geographic education, and geographic information science. Ongoing faculty research sites in international areas include East Asia, high Asia, Latin America, and Mediterranean Europe.

Geography is in the School of the Environment and participates in the Earth, Environment and Society (EES) Ph.D. Program. Over 100 undergraduate majors and 30 graduate students participate in two departmental groups, the Friends of Geography and the Student Chapter of the American Society for Photogrammetry and

Remote Sensing/Columbia River Region. Several research groups and outreach programs in the department provide additional job and internship opportunities for interested students in public agencies and businesses in such fields as planning, environmental management, GIS, and cartography.

The geography program gives students an appreciation and understanding of the human environment on global, regional, and local scales. It provides background and requisite training for careers in resource, planning, environmental, or education fields. Geography majors find work in urban and natural resource management, spatial/GIS analysis, urban planning, map design and production, and statistical analysis. Geography is the lead department on campus for training in GIS, remote sensing, cartography, and spatial analysis.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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 techniques, physical geography, regional geography, and human geography—as detailed below. Of the courses presented for the major, 13 credits are in required courses (Geog 210, 230, and 380), and at least 36 Geography credit hours must be at the upper division, to include 16 hours 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 is 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 Climate Variability (4)	
Geog 313 Biogeography (4)	
Geog 314 Severe Weather (4)	
Geog 320 Geomorphic Processes (4)	
Geog 322 Alpine Environments (4)	
Geog 333 Weather (4)	
Geog 340 Global Water Issues & Sustainability (4)	
Geog 407 Seminar in Physical Geography(4)	
Geog 413 Biogeography of the Pacific Northwest (4)	

Geog 414 Hydrology (4)	
Geog 415 Soils and Land Use (4)	
Geog 418 Landscape Ecology (4)	
Human Geography:.....	12
Geog 230 Environment and Society: Global Perspectives (4) required	
Geog 240 Geography of Wine (4)	
Geog 331 Geography of Globalization (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 and Political 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)	
Regional Geography:.....	12
Geog 230 Environment and Society: Global Perspectives (4) required	
Geog 321 Mt. Hood (4)	
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 355 Landscapes of Spain (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)	
Geog 465 Tuscany: Sustainability in City and Country (4)	
Geographic Techniques:.....	12
Geog 380 Maps and Geographic Information (5) required	
Geog 407 Seminar in Research Skills (4)	
Geog 420 Field Methods in Physical Geography (4)	
Geog 425 Field Methods in Human Geography (4)	
Geog 475 Digital Compilation and Database Design (4)	
Geog 480 Remote Sensing and Image Analysis (4)	
Geog 481 Digital Image Analysis I: Introduction (4)	
Geog 482 Digital Image Analysis II: Advanced Remote Sensing (4)	
Geog 484 Cartographic Applications of GIS (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 490 GIS Programming (4)	
Geog 492 Geographic Information Systems II: Advanced GIS (4)	
Geog 493 Digital Terrain Analysis (4)	
Geog 494 GIS for Water Resources	
Geog 495 Maps Models and GIS (4)	
Geog 496 Visualization of Spatial Data (4)	
Geog 497 Spatial Quantitative Analysis (4)	
Geography Electives.....	12
Total credits in geography (minimum)	60

Course 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 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:

	Credits
Geog 210 Physical Geography.....	4
Geog 230 Environment and Society: Global Perspectives.....	4
Geog 380 Maps and Geographic Information.....	5
Geography electives (upper-division).....	16
Total (minimum)	29

All courses used to satisfy the departmental minor requirements must be graded C- or above.

Requirements for a minor in GIS. To earn a minor in GIS (Geographic Information Systems) a student must complete a minimum of 29 credits in geography (at least 16 credits must be taken in residence at Portland State University), to include the following:

	Credits
Core courses: (17 credits)	
Geog 210 Physical Geography or	
Geog 230 Environment and Society.....	4
Geog 380 Maps and Geographic Information.....	5
Geog 488 GIS I: Introduction.....	4
Geog 492 GIS II: Advanced GIS.....	4

Plus three additional courses from the list of electives: (12 credits)

Geog 475 Digital Compilation and Database Design.....	4
Geog 480 Remote Sensing and Image Analysis..	4
Geog 481 Digital Image Analysis I: Introduction.....	4
Geog 482 Digital Image Analysis II: Advanced Remote Sensing.....	4
Geog 484 Cartographic Applications of GIS.....	4
Geog 485 Map Design & Production.....	4
Geog 489 Building a GIS Database with GPS.....	4
Geog 490 GIS Programming.....	4
Geog 493 Digital Terrain Analysis.....	4
Geog 494 GIS for Water Resources.....	4
Geog 495 Maps, Models, and GIS.....	4
Geog 496 Visualization of Spatial Data.....	4
Geog 497 Spatial Quantitative Analysis.....	4
Total (minimum)	29

All courses submitted to satisfy requirements for the minor in GIS must be graded and passed with a C or better. At least 16 credits must be taken in residence at PSU.

Students who are also working toward the major in Geography must take (in addition to the core courses for the GIS minor) at least 12 credits from the list of electives that will be uniquely applied to the GIS minor.

Students considering the GIS minor are strongly encouraged to meet with a geography adviser to work out an instructional program that best meets their needs.

SECONDARY EDUCATION PROGRAM

Adviser: See department chair

(See Interdisciplinary Studies page 274)

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 Earth, Environment, & Society Ph.D. degree in the School of the Environment, see page 198.

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 (G.R.E.) scores and letters of recommendation from three faculty members of colleges previously attended.

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.

Degree requirements

University master's degree requirements are listed on page 65. 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 first term after admission to the program). The program of study must include a minimum of 45 graduate credits for thesis students and 54 graduate credits for nonthesis students. Of these, a minimum of 36 graduate credits must be in geography for the thesis option, to include 6 credits of Geog 503 (Thesis); a minimum of 40 graduate credits must be in geography for the nonthesis option, including 2 credits of Geog 501 Research. Both thesis and nonthesis programs must include the following: Geog 521, Geog 522, and Geog 523.

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 of Techniques/Skills coursework).

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 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 must register for one 2-credit section of Geog 501 Research to rewrite, edit, and revise a research paper or project which must evolve from graduate coursework in geography at PSU. A final oral presentation of the paper is required for completion of the degree. All graduate students, whether in thesis or nonthesis programs, are encouraged to attend the department's colloquia.

The Geography Department follows the University requirement for minimum and continuous enrollment.

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 (Interdisciplinary Studies), see page 274.

Courses

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)

This course examines current and historical distributions of organisms as explained by environmental and biological factors. The goal of the course is to improve student understanding of how multiple factors such as soil properties, natural selection, climate change, and human activities shape the geography of organisms at local to global scales. Recommended 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. This course is the same as Geology 374; course may be taken only once for credit. 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 geocology 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, soils, and vegetation. Recommended prerequisite: Geog 210.

**Geog 331
Geography of Globalization (4)**

An introduction to theories and concepts related to global economic activities within agriculture, manufacturing, service and information industries. The course focuses on global processes and linkages between local and global economies. 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 333
Weather (4)**

Introductory course in the atmospheric environment providing a comprehensive understanding of atmospheric structure and the changes over time that result in the weather we experience. Topics include, atmospheric moisture (fog, rain, clouds), atmospheric stability and cloud development, air pressure and winds, air masses and fronts, and hurricanes and tornados. This course is the same as Ph 333; course may be taken only once for credit. Recommended: upper division standing or Geog 210.

**Geog 340
Global Water Issues and Sustainability (4)**

Examines the availability and quality of freshwater resources around the world. Includes the global water cycle, human use and modifications of global water systems, effects of climate change on global freshwater, water policy in international rivers, and sustainable water resource management. Focuses on case studies in major international rivers.

**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 and Political Ecology (4)**

Introduction to geographic perspectives on cultural and political ecology. Investigates cultural adaptation and environmental change from an ecological perspective, focusing on biomes, cultural adaptations within them and the political structures that influence cultural adaptations. 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 Russia and neighboring countries 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 analyzes 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 local, 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 413/513****Biogeography of Pacific Northwest (4)**

This course examines the regional biogeography of current and historical plant and animal distributions.

Course topics include the abiotic constraints to species distributions, ecological processes (succession and disturbance), and biogeographic theory and management. The course includes two mandatory all day field trips. Prerequisites: upper-division standing or Geog 313 or Bi 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 flood-plain 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**Landscape Ecology (4)**

Examines the structure, function, and change of natural and human-modified communities at the scale between individual communities and regional biomes. Focuses on spatial patterns and processes as they relate to the patch mosaic of interacting ecological communities. Expected preparation: Geog 313 or Bi 357. Upper-division standing required. This is the same course as ESM 418/581 and may be taken only once for credit.

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 425/525**Field Methods in Human Geography (4)**

Field observation, description, and analysis in human geography. Students explore landscapes in Portland metropolitan region through a series of exercises including sampling techniques, field mapping, and photography supplemented by data collection from census records, tax records, historic maps and photographs, and published accounts about places. Recommended prerequisites: 8 credits of upper-division or regional 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 465/565

Tuscany: Sustainability in City and Country (4)

Explores historic and contemporary connections between city and country in Tuscany within a framework of environmental, social, and economic sustainability. Topics include rural land use, sustainable agriculture and forestry, food production and food networks, agritourism, landscape stewardship, urban design, and alternative energy production. Examines international transferability of sustainability concepts. Expected preparation: junior/senior or graduate class standing; relevant experience; permission of instructor.

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

Remote Sensing and 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

Digital Image Analysis I: Introduction (4)

Interpretation and measurement from remotely sensed digital 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, vegetative cover, and urban landscape. Prerequisites: Geog 488/588 or USP 591. Expected preparation: Geog 480/580.

Geog 482/582

Digital Image Analysis II: Advanced Remote Sensing (4)

Advanced topics in digital remote sensing including image classification methods for geographic information extraction, digital change detection methods for measuring land use/land cover change, and advanced algorithms for digital image analysis. Includes computer exercises in classification and change detection using leading image processing software packages. Prerequisites: Geog 481/581.

Geog 484/584

Cartographic Applications of GIS (4)

Provides a general introduction to GIS by focusing on the mapmaking capabilities of GIS software. Topics include basic cartographic principles of visual communication and representation, how to turn geographic datasets into effective maps both for print and the web, and how to critique maps. Prerequisites: Geog 380.

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)

Introduces the general principles and application of Geographic Information Systems (GIS). Topics include geographic data models, the nature of geographic data, databases, data collection, mapmaking, and spatial analysis techniques. Students will use GIS software to complete a series of computer lab exercises that demonstrate 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.

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. Prerequisites: Geog 488/588 or USP 591.

Geog 490/590

GIS Programming (4)

Introduction to GIS programming languages for customizing applications and streamlining spatial analysis. Topics include GIS software environment, programming syntax and styles, interface customization, GIS routines and functions, and basic algorithms. Programming lab included. 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 493/593

Digital Terrain Analysis (4)

Introduction to the theory and methods of the generation, compilation, analysis, and applications of digital elevation data. Topics include GIS terrain data models, digital photogrammetry, LiDAR data processing, terrain surface analysis, terrain visualization, and watershed delineation. Computer lab included. Prerequisites: 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. Expected preparation: Geog 380, 414/514, and 488/588 or USP 591.

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. Expected preparation: 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, developing hypotheses, determining researchability, acquiring and analyzing data, developing conclusions, and organizing and writing reports. Required of all graduate students in geography.

Geog 523

Geographic Research and Applications (1)

Applications of theory and method in geography through discussion of faculty research; relates theoretical underpinnings of the discipline to faculty research agendas, broadens perspectives on geographical research questions. Required of all geography graduate students.

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.)

Geog 696

Dynamics of Ecosystem Services (4)

Evaluates changing ecosystem services in a holistic way, drawing knowledge from conservation ecology, economics, environmental engineering, environmental sciences, geographical and spatial sciences with a focus on methodological issues. Investigates the ecological costs of human activities in such topics as climate change, groundwater contamination, algal bloom, urbanization, agricultural intensification, deforestation, overfishing and mangrove conversion.

**17A Cramer Hall
725-3022**

www.geol.pdx.edu/

B.A., B.S. in Geology
B.A., B.S. in Earth Science
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

Undergraduate programs

The Department of Geology offers programs leading to the bachelor's degree in geology and earth science, as well as studies in numerical modeling, geochemistry, geomicrobiology, glaciology, hydrogeology, engineering geology, planetary geology, and environmental geology.

The programs serve both majors in geology and earth science and nonmajors: those who may wish to broaden their science background; those preparing to teach general or earth sciences or geology in elementary or secondary 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 as researchers in mitigation of

environmental problems, assessment of ground and surface water resources, exploration, development and management of mineral and fuel resources, 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 and earth science should plan to complete the required mathematics, chemistry, and physics courses as early in their program as possible.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 for more information.

Degree requirements

Bachelor of Science/Bachelor of Arts in Geology. 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 G 207 Computer Based Geology Laboratory	2-3
G 203 Historical Geology	3
G 206 Historical Geology Laboratory.....	1
G 312 Mineralogy.....	3
G 313 Methods in Mineralogy	2
G 314 Petrology.....	3
G 315 Lithology and Petrography.....	2
G 318 Processes in the Surface Environment	3
G 319 Processes in the Surface Environment: Methods.....	2
G 324 Computer Applications and Information Technology.....	5
G 326 Numerical Modeling of Earth Systems.....	5
G 434 Structural Geology and Tectonics.....	5
G 435 Stratigraphy and Sedimentation.....	5
G 485 Field Methods in Geosciences	4

	Total in geology	51-52
At least 16 credits of electives must be chosen from upper-division geology courses (excluding G 301, G 340, G 341, G 342, G 344, G 345, G 346, G 351, G 352, G 353, G 355, G 374, G 450, G 453, and G 454). This may include up to 8 credits of upper-division mathematics, science, or engineering courses approved by the undergraduate adviser. Students may use up to 4 credits from an approved summer field camp course.....		
	Subtotal	67-68
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 110-115

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling departmental major requirements.

Bachelor of Arts/Bachelor of Science in Earth 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 203 Historical Geology	3
G 206 Historical Geology Laboratory.....	1
G 200 Field Studies.....	1
G 312 Mineralogy.....	3
G 313 Methods in Mineralogy	2
G 314 Petrology.....	3
G 315 Lithology and Petrography.....	2
G 318 Processes in the Surface Environment	3
G 319 Processes in the Surface Environment: Methods.....	2
At least 16 credits of electives must be chosen from upper-division geology courses (excluding G 301, G 340, G 341, G 342, G 344, G 345, G 346, G 351, G 352, G 353, G 355, G 374, G 450, G 453, and G 454) (may include either G 355 or G 450). Up to 8 credits may be taken in upper-division math, science, or engineering.....	
	16
Eight credits from the following courses:.....	
	8
G 340 Life of the Past (4)	
G 341 Geology of the Oregon Country (4)	
G 342 Volcanoes and Earthquakes (4)	
G344 Geology and the National Parks (4)	
G 345 Life in the Universe (4)	
G 346 Exploring Mars (4)	

G 352 Minerals in World Affairs (4)	
G 353 Natural History of Dinosaurs (4)	
G 374 Geomorphic Processes (4)	
G 453 Geology of the Pacific Northwest (4)	
G 454 Cascade Volcanoes (1)	
Total in geology (minimum)	52-53
Upper-division credits in pre-approved sustainability-related courses.....	8
Mathematics to include either option 1: Math to include Mth 251.....	4
option 2: Math to include Mth 111, Mth 112 or passing the appropriate placement test, and Mth 212.....	8
Statistics to include Stat 243; Stat 244 recommended.....	4
One year of 200-level college chemistry or equivalent with labs.....	15
One year of 200-level biology plus labs or	
One year of 200-level physics plus labs.....	15
Subtotal	46-50
Total	98-103

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 313 Methods in Mineralogy (2)	
G 318 Processes in the Surface Environment (3)	
G 319 Processes in the Surface Environment: Methods (2)	
G 322 Global Biogeochemical Cycles (5)	
G 324 Computer Applications and Information Technology (5)	
G 341 Geology of the Oregon Country (4)	
G 424 Geographic Information Systems for the Natural Sciences (4)	
G 434 Structural Geology and Tectonics (5)	
G 435 Stratigraphy and Sedimentation (5)	
G 440 Volcanology (4)	
G 443 Groundwater Geology (4)	
G 447 Environmental Sediment Transport (4)	
G 448 chemical Hydrogeology (4)	
G 455 Environmental Coastal Geomorphology (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

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
Chem 360 Origins of Life on Earth (4)	
G345 Life in the Universe (4)	
G346 Exploring Mars (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

Students are encouraged to contact Michael L. Cummings, undergraduate adviser, for help in designing a program leading to a minor in geology, environmental geology, computer applications, or space and planetary science. Upper division courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling departmental 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, earth science or the requirements listed on page 303 for inte-

grated 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 earth science; or major in general studies in science and complete the integrated science program on page 303.

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 the School of the Environment.

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.

Geology is in the School of the Environment and participates in the Earth, Environment, & Society Doctoral Program. Specialized studies in hydrogeology, geomicrobiology, environmental geology, engineering geology, geomechanics, glaciology, and applied stratigraphy, along with multidisciplinary environmental science courses and seminars, will partially fulfill the requirements for the Ph.D. For information relative to the Ph.D. program in Earth, Environment, & Society see page 198.

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 "Degree requirements" on page 65. Specific departmental requirements for the M.S./M.A. Geology or the M.A./M.S. Geology-Geohydrology with a thesis option are:

1. Completion of a minimum of 45 credits in approved graduate courses.
 - a. Students must take G 523 Statistics and Data Analysis in the Geosciences 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 or the M.A./M.S. Geology-Geohydrology with a nonthesis (project) 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 Statistics and Data Analysis in the Geosciences 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 or research paper 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 203

Historical Geology (3)

Earth's history as revealed through the rock and fossil record. Emphasis on the physical and biological changes exhibited through time. Expected preparation: G201, G202. Requires concurrent enrollment in G 206.

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 206

Historical Geology Lab (1)

Earth's history as revealed through the rock and fossil record. Emphasis on the physical and biological changes exhibited through time. Lab exercises stress the study of fossils. Concurrent enrollment in G 203 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 (3)

Description, classification, and genesis of minerals and their importance for understanding the make up of the Earth and planets, mineral resources, and industrial applications. Prerequisite: one year of general chemistry. Co-requisite: G313.

G 313

Methods in Mineralogy (2)

Analytical and imaging methods to evaluate a range of physical and chemical properties of minerals such as morphological features, quantitative evaluations of chemical constituents, and determination of crystal structures used for mineral identification. Prerequisites: one year of general chemistry. Corequisite: G 312.

G 314

Petrology (3)

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. Prerequisite: G312. Co-requisite: G315.

G 315

Lithology and Petrography (2)

Description of the physical characteristics of naturally occurring rocks in hand specimen and thin section under the petrographic microscope. Understanding textures and fabrics of rocks and what physical and chemical parameters control them such as crystallization and nucleation rate, compositional environment, stress field, and prove-

nance characteristics. Prerequisites: G 312, G 313. Corequisite: G 314.

G 318**Processes in the Surface Environment (3)**

Physical processes occurring in the upper crust including tectonic provenances, weathering, mass transport, fluid-sediment transport, depositional environments, stratigraphic sequences, and intra-stratal diagenesis. Prerequisite: G 201/204 and G 202/205. Co-requisite: G319.

G 313**Processes in the Surface Environment: Methods (2)**

Introduction to methods of investigation of physical processes occurring in Earth's upper crust. Topics include design and use of environmental sensors, landscape analysis using digital data sets, and scale model experiments. Prerequisites: G 201/204 and G 202/205. Corequisite: G 318.

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 261.

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 solving systems of equations that describe geological processes. Three lectures and two 2-hour laboratories. Prerequisite: Mth 254 or concurrent enrollment.

G 333*Evolutionary Concepts (4)**

Designed to provide background in evolutionary concepts 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.

G 340**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 341**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, 352, 430, 457.

G 342*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 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 346**Exploring Mars (4)**

On-line course centered on the ongoing exploration of Mars. Topics follow an exploration timeline and include Mars' geology, climate, potential for life, and habitability. Expected preparation: G 201.

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. 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. Prerequisite: Upper-division standing.

G 355**Geosciences for Elementary Educators (4)**

An integrated survey of concepts from geology, astronomy, and climatology for students interested in elementary education. Course is 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. This course is the same as GEOG 320; course may be taken only once for credit.

G 399**Special Studies (Credit to be arranged.)****G 401/501****Research (Credit to be arranged.)**

Prerequisite: G 405.

G 403**Thesis (4)**

Prerequisite: Successful completion of G 401 (Research) for 4 credits and Departmental approval. Graded A-F.

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 science. Upper-division standing.

G 434*Structural Geology and Tectonics (5)**

Study of origin, interpretation, and mapping of major and minor geologic structures. Two lectures; two 2-hour laboratories; and required field study. Prerequisite: G 326.

G 435*Stratigraphy and Sedimentation (5)**

Principles and techniques of recognition, interpretation, and correlation of stratified rock units used to establish time histories of tectonic, volcanic, and sufficial processes, and environment of deposition. Two lectures, two 2-hour laboratories, and required field study. Prerequisite: G 318 and G 314.

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 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: ESM 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 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 tsunamis. 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./B.S. in earth science. May not be used to meet requirements for the B.A./B.S. in geology.

G 455/555**Environmental Coastal Geomorphology (4)**

Introduction to coastal processes, geomorphology, habitat, and development issues: emphasis on coastal shelf, beach, estuarine and dune systems. Includes the influence of sea-level, tides, waves,

wind, and development pressures on these coastal systems. Prerequisites: G 351 or G 318.

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 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 week-end in the field and production of a final report with data and conclusions. Prerequisites: Ph 203 or 213, Mth 261.

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 one 4-hour laboratory. One-week field exercise at end of term. Prerequisite: G 434 and G 435.

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 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 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 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
725-3917
www.pdx.edu/history/

B.A., B.S.
 Minor in History and Philosophy of
 Science
 Minor in Medieval Studies
 Pre-Education Program
 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 discipline—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.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for History's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Civil and Environmental Engineering's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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)	20
Hst 300 Historical Imagination	4
Hst 405 Reading Colloquium.....	4
Hst 407 Seminar	4
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

Reading Colloquium/Seminar Requirement

Students are required to take these two courses as a sequence, identified by letters (Hst 405a, followed by 407a, etc.)

- 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 20 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.

History honors option. The honors track 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 405 Reading Colloquium*.....	4
Hst 407 Seminar*.....	4
Hst 495 Comparative World History.....	4
History Electives.....	16
Total	32

*Must be taken in sequence (e.g., 405a-407a)

- 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.

Requirements for minor in history and philosophy of science. The interdisciplinary minor in history and philosophy of science requires 32 credits distributed as follows:

	Credits
Two core courses	
Hst 387 History of Modern Science.....	4
Phl 470 Philosophy of Science or	
Phl 471 Topics in Philosophy of Science.....	4
Six elective courses chosen from..... 24	
Anth 325 Culture, Health, and Healing	
Anth 414 Culture and Ecology	
Bi 343 Genes and Society	
Ch 170 Fundamentals of Environmental Chemistry	
Ch 360 Origins of Life on Earth	
CS 346/SySc 347 Exploring Complexity in Science and Technology	
EC 460 History of Economic Thought	
ESM 330 Environmental and Ecological Literacy	
G 333/Bi 175 Evolutionary Concepts	
Geog 366 Historical Geography of North America	
Geog 347 Environmental Issues and Action	
Hst 427 Topics in History of Science (with different topics, may be repeated for credit)	
Hst 434 US Social and Intellectual History	
Hst 440-441 American Environmental History I-II	
Hst 460 Topics in European Intellectual History (with different topics, may be repeated for credit)	
Mth 486 Topics in the History of Mathematics	
Phl 301 Ancient Philosophy	
Phl 303 Early Modern Philosophy	
Phl 305 Analytic Philosophy	
Phl 306 Science and Pseudoscience	
Phl 307 Science and Society	
Phl 318 Philosophy of Medicine	
Phl 470 Philosophy of Science (If not included as core course)	
Phl 471 Topics in Philosophy of Science (If not included as core course)	
PS 319 Politics of the Environment	
Sci 321/ME 304 Energy and Society	
Sci/W/S 347-348 Science, Gender, and Social Context	
Sci 355/Ph 387 Science through Science Fiction	
Sci 359 Biopolitics	
Sci 361 Science: Power-Knowledge	
Soc 459 Sociology of Health and Medicine	
Students should take note of any prerequisites established by the respective departments.	
Total	32

For advising concerning the minor, consult the

History Department office.

Requirements for minor in medieval studies. The interdisciplinary minor in medieval studies is an interdisciplinary program with courses offered in the departments of Art History, English, History, Philosophy, World Languages and Literatures, and Theatre and Film. Students will fulfill 28 credits of coursework in a minimum of three disciplines, distributed as follows:

- Courses must be completed in at least three separate departments or programs;
- At least 20 credit hours must be completed in upper-division courses, with at least 8 of those credit hours at the 400-level.

Courses may be selected from the list below:

ArH 407 Art History Seminar (with History Department approval)
ArH 432 Issues in Gender and Art (with History Department approval)
ArH 450 Great Periods in Art (with History Department approval)
ArH 456 Early Medieval Art
ArH 457 Byzantine Art
ArH 458 Romanesque Art
ArH 459 Gothic Art
ArH 461 Northern Renaissance Art
ArH 471 Italian Renaissance Art I
ENG 319 Northern European Mythology
ENG 340 Medieval Literature
ENG 426 Advanced Topics in Medieval Literature
ENG 447 Major Forces in Literature: Arthurian Literature
ENG 448 Major Figures in Literature (with History Department approval)
ENG 449 Advanced Topics in Cultural Studies: Medieval Women
WLL 335 The Icelandic Sagas
FR 341 Introduction to French Literature (taught in French)
FR 442 Medieval Works in Translation
GER 341 Introduction to German Literature (taught in German)
GRK 101-203 First- and second-year Greek
HST 350 English History from 1066 to 1660
HST 352 European Women's History to 1700
HST 354 Early Medieval Europe, 300-1100
HST 355 Late Medieval Europe, 1100-1450
HST 407 Seminar (with History Department approval)
HST 416 Topics in Roman History: Pagans and Christians
HST 450 Medieval England
HST 452 Topics in the History of European Women (with History Department approval)
HST 453 The Medieval City: Communities of Conflict and Consensus
HST 454 Topics in Medieval History
HST 461 Topics in Jewish History (with History Department approval)
HST 475 History of Russia: Origins to Peter the Great, 800-1700
LAT 101-203 First- and second-year Latin
LAT 331 Early Medieval Civilization
PHL 302 Medieval Philosophy
SPAN 341 Introduction to Hispanic Literature (taught in Spanish)
SPAN 441 Major Works in Translation (with History Department approval)
TA 471 Theater History: Medieval/Renaissance Drama

All courses must be passed with a C- or better.

For advising concerning the minor, please

consult the History Department office.

PRE-EDUCATION PROGRAM

History majors interested in a career in secondary school teaching should make an appointment to speak to the secondary education social studies adviser for the College of Liberal Arts and Sciences (503-725-3822). To be eligible to apply to PSU's Graduate Teacher Education Program (GTEP), History majors need to take 8 credits of Economics (any level), 8 credits of Geography (any level), 8 credits of Political Science (any level) and Psy 311, "Human Development" (4 credits).

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 the graduate study, applicants normally should have the minimum preparation undertaken by an undergraduate major in history and should demonstrate good research and writing skills. Most students admitted to the program have maintained a GPA of at least 3.50 in upper-division history courses. Non-history majors or students with a lower history GPA may be considered for admission to the graduate program on a qualified basis. 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,
- Two examples of their writing, preferably history research papers.
- Foreign students must comply with the University requirements of a minimum grade of 550 in the Test of English as a Foreign Language (TOEFL).

Applications for fall-term admission are due by February 15.

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 274.

Degree requirements

University master's degree requirements are listed on page 65. 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. While Hst 500 is strongly recommended for all entering graduate students, it is required for those who have not completed an undergraduate course in historiography (Hst 300 or equivalent).

In addition to coursework, students are required to complete, prior to the thesis, the following qualifying requirements:

- Passing two written field examinations
- Fulfilling the University's foreign language requirement for the M.A. degree
- Successfully submitting a thesis proposal

Students should ordinarily complete these requirements no later than the point at which they have completed 32 credits of graduate study.

Field Exams. The two written examinations are administered by two regular (tenured or tenure-track) members of the department. One field examiner ordinarily serves as the main thesis adviser, and the other examiner also serves on the thesis committee. The two fields must be mutually distinct, and are defined geographically and/or thematically—there may also be a chronological delimitation—by agreement between the student and the respective examiners. Coursework for the M.A. must include a minimum of 12 credit hours for the first field and a minimum of 8 credit hours for the second field. Examples of the definition of fields, and guidelines for the examinations, are available from the Department Office.

Foreign Languages. Graduate students should 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. Per university policy, proficiency may be demonstrated by successfully completing language coursework equivalent to PSU's 203-level course, or by passing an examination administered for this purpose by the Department of World Languages and Literatures. Some fields of research—including, but not limited to, Asian or Middle Eastern history—may

require language preparation beyond the formal University requirements. Students interested in these areas are urged to consult their advisers about expectations for study of languages prior to or soon after admission to the program.

Thesis. The Master of Arts in history culminates in 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. A thesis proposal is submitted to the two field examiners, one of whom also serves as the thesis adviser. Once it is accepted, a copy of the proposal is filed in the Department Office. Guidelines for the thesis proposal are available from the thesis adviser or the Department Office. Upon completion of the thesis, each student must successfully defend it in an oral examination before a committee comprising the thesis adviser, the other field examiner, a third reader from the History Department, and a member from outside the History Department.

Re-enrollment. Per university policy (see page 62), students in the M.A. program who do not have an approved leave of absence and who fail to successfully complete a History graduate course over a one-year period will have their enrollment in the program cancelled. For thesis credit, HST 503, "In Progress" counts as successful completion. To re-enroll, students must 1) have maintained a minimum 3.00 GPA in History graduate classes; 2) have completed without incompletes or withdrawals at least two thirds of their courses; 3) submit a plan for completion of the degree program—including (as appropriate) remaining coursework, field and language exams, and thesis—endorsed by their major advisor.

Public History Track. 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, publication, 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 (unless student has successfully completed HST 496 as an undergraduate);
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 (HST 509);
4. a minimum of 6 public history internship credits (HST 504); and
5. one public history lab course (HST 511).

World History Track. A specialization in world history is available through the department's world history M.A. track. Students pursuing the world history track fulfill all the requirements for a Master of Arts in History, choosing world history as their primary field. In addition, the world history track requires two regional concentrations as the secondary field. The field requirements for the world history track thus include:

1. 12 credits of Hst 595 Comparative World History [an appropriate adviser-approved course can replace 4 credits of 595]
2. Two regional concentrations, with a minimum of 8 credits in each (at least 16 credits)

Regular M.A. students can still choose world history as a secondary field and fulfill this requirement in the standard way by taking 8 credits of Hst 595.

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 274.

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 104, 105, 106

World History (4, 4, 4)

A survey of world history from earliest times to the present, combining both chronological and thematic approaches. Hst 104: Origins to 1000 CE; Hst 105: 1000-1600 CE; Hst 106: 1500 CE to present.

Hst 199

Special Studies (Credit to be arranged.)

Hst 201, 202, 203

History of the United States (4, 4, 4)

General survey of United States history. Hst 201: colonial era to 1840; Hst 202: 1840 to 1914; Hst 203: 1914 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 writing; (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 BCE, 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 317
Jewish History from Antiquity to the Medieval Period (4)

Introduces students to the Jewish historical experience from its Biblical origins through the end of the first millennium CE primarily by means of close readings of primary sources. Describes the diverse forms of Jewish life under Persian, Greco-Roman, Early Christian and Muslim rule and examines the boundaries of pre-modern Jewish cultural and religious identity. This is the same course as JSt 317 and may be taken only once for credit.

Hst 318
Jewish History from the Medieval Period to the Present (4)

Survey of Jewish history from the year 1000 to the present, covering major developments in Jewish society and culture in the medieval Islamic and Christian realms, early modern Europe and the Middle East, and the modern world. Topics include religious thought, communal and political structures, and Jewish/non-Jewish relations. This is the same course as JSt 318 and may be taken only once for credit.

Hst 319
Rabbinic Culture in the Roman World (4)

Introduction to history and literature of the rabbinic movement in Roman Palestine, 70 CE-500 CE. Origins of the rabbis, their role in society, genres of rabbinic literature (Mishnah, Talmud, Midrash), rabbinic law and theology and rabbinic attitudes towards the urban culture of the Roman

Near East. This is the same course as JSt 319 and may be taken only once for credit

Hst 320
East Asian Civilizations (4)

Origins and development of East Asian civilizations from the earliest human cultures to around 1300. Focus on interactions between Chinese influences and indigenous traditions in Japan, Korea, and Vietnam; Confucianism, Buddhism, and other religious traditions; social organization, economies, and political institutions; cultural, artistic, and literary traditions. Expected preparation: upper-division standing.

Hst 321
Early Modern East Asia, 1300-1800 (4)

East Asia from the era of the Mongol conquests through European contacts, encompassing the Yuan, Ming, and Qing dynasties in China, Choson Korea, and the Ashikaga through Tokugawa periods in Japan. Expected preparation: upper-division standing

Hst 322
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. Expected preparation: upper-division standing.

Hst 323
Modern Korea (4)

Examination of the modern history of Korea, including of the "two Koreas" (North Korea and South Korea) in the postwar period.

Hst 327
U.S. History, 1890-1932 (4)

A survey of political, social, cultural, and economic history covering Populism and the Crisis of the 1890s, the Purity Crusade, Corporate and Anticorporate Progressive Reform, World War I, the League of Nations and Red Scare of 1919-20, the New Era and Cultural Conflicts of the 1920s, and the 1929 stock market crash. In doing so, the class addresses the presidencies of William McKinley, Theodore Roosevelt, William Howard Taft, Woodrow Wilson, Warren G. Harding, Calvin Coolidge, and Herbert Hoover. Recommended preparation: upper-division standing.

Hst 328
U.S. History, 1932-1960 (4)

A survey of political, social, cultural, and economic history covering the Great Depression of the 1930s, Noninterventionist Sentiment and World War II, Cold War Domestic and International Anti-Communism, and the Early Civil Rights Movement. In doing so, the class addresses Franklin D. Roosevelt's New Deal and the presidencies of Harry Truman and Dwight D. Eisenhower. Recommended preparation: upper-division standing.

Hst 329
U.S. History, 1960-Present (4)

A survey of political, social, cultural, and economic history covering the Cold War and Vietnam, Sixties Civil Rights and Radical Activism, Watergate, the Rise of Populist Conservatism, the Emergence of the Global Economy, and Political Polarization. In doing so, the class addresses the presidencies of John F. Kennedy, Lyndon B. Johnson, Richard Nixon, Jimmy Carter, Ronald

Reagan, George H. W. Bush, Bill Clinton, and their successors. Recommended preparation: 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 332
History of the North American Fur Trade (4)

Examines the global fur trade in North America, including ocean and river transportation and exploration, the emergence of Metis populations, company cultures, and the migration of peoples to and within North America. Will address the Hawaiian Islands, Russian America, Canada, the Pacific Northwest, St. Louis and New Orleans.

Hst 334
History of Canada (4)

Survey of the social, economic, and political history of Canada from the sixteenth century to the present. Topics include colonialism, First Nations peoples, evolution of government, Canadian-U.S. relations.

Hst 335
Race and Ethnicity in U.S. History (4)

This course studies the history, meaning and construction of racial and ethnic identities in the U.S. from European colonialism to present. It engages the ways in which social practices, science, economics, cultural images, and local and federal laws worked to attach meaning to the ideologies of racial and ethnic identities.

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 Rajneeshees 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 United States 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 344**Culture, Religion, Politics: Jews and Judaism in America Since World War Two (4)**

Surveys significant religious, cultural, and political developments in American Jewry since the end of World War Two. Topics include the impact of the

war and the Holocaust; liberalism, radicalism, and neoconservatism; suburbia; the counterculture; the fading of immigrant memory; Jewish feminism; the orthodox revival; relations with African-Americans and other minority groups; and the relationship between American Jewry and the State of Israel. Recommended: 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 from National Unification to European Union (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 362**

Amazon Rain Forest (4)

Examines different ways in which the Amazon has been perceived through time. This course is the same as Intl 362; course may only be taken once for credit. Expected preparation: upper-division standing.

Hst 363

History of the British Empire (4)

Surveys four centuries of the expansion and decline of the British Empire. Emphasis on the military, political and economic history of imperialism, the comparative study of colonial territories, and the emergence of post-colonial societies. Expected preparation: 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 375

History of Kievan and Muscovite Russia, 800-1700 (4)

Explores Kievan Rus and Muscovite Russia. Emphasis on political change, social conflicts, and identity formation through the appanage period. Mongol rule, the rise of Muscovy, and territorial expansion.

Hst 376

History of Imperial Russia, 1700-1917 (4)

Studies the Russian Empire from its founding to the Russian Revolution of 1917. Emphasis on attempts at reform, and on political and cultural identity formation of various social groups and nationalities of the empire. Expected preparation: upper-division standing.

Hst 377

History of the Soviet Union and Post-Soviet Russia (4)

Studies the Soviet Union from its founding in 1917 to the early post-Soviet period. Emphasis on socialism as theory and policy, and on political and cultural identity formation of various social groups and nationalities of the Soviet Union. Expected preparation: upper-division standing.

***Hst 385, 386**

The Modern Middle East (4, 4)

A two-quarter survey of the social, cultural, economic, and political history of the Middle East from the eighteenth century to the present day. Hst 385: The Modern Middle East I. Overview of the Ottoman and Qajar Empires from the 18th century till the outbreak of World War I. Coverage of key themes such as imperialism, political reform, sectarianism, constitutionalism, and revolution. Hst 386: The Modern Middle East II. Overview of the Middle East since World War I. Discussion of colonialism and nationalism, emergence of mass society, economic development, birth of the Arab-Israeli conflict, Cold War, oil, and the rise of political Islam.

Hst 387

History of Modern Science (4)

Examines the interplay between science as a system of knowledge and science as the institutions by which that knowledge is produced. Through reading, lectures, independent research, and discussion, the course explores how the science has affected and been affected by political, social, and cultural developments. Primary focus is Europe and America from the 16th century to the present, but global perspectives will also be considered. Recommended: upper-division standing.

Hst 399

Special Studies (Credit to be arranged.)

Hst 401/501

Research (Credit to be arranged.)

Consent of instructor.

Hst 403/503

Thesis (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 Colloquium (4)

Provides students with an overview of the scholarship in a specific historical field. The course requires students to read, review, and discuss the significant books and articles in the field. This course is the prerequisite for Hst 407, Seminar. Prerequisites: Hst 300 or consent of the instructor.

Hst 407/507

Seminar (Credit to be arranged.)

Study and application of the techniques of historical research and writing. Prerequisites: Hst 300 and Hst 405 or consent of the 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 411/511

Public History Lab (4)

Lab course will focus on a specific sub-field in Public History. Working professionals will instruct students in the latest techniques used in public history work. One lab course is required for graduate students taking the public history track in the M.A. in history. Prerequisites: Hst 496/596.

***Hst 412/512**

Topics in African History and Culture (4)

An in-depth exploration of selected topics in African cultural history. Special attention will be given to thematic issues of broad application to the understanding of cultural interaction, continuity, and change. The subject matter will vary from term to term. (Maximum number of credits is 12; 4 credits each for three courses with different topics.) Prerequisites: upper-division standing.

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. Maximum number of credits is 12; 4 credits each for three courses with different topics. 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)**

A lecture course that explores selected topics in modern U.S. political culture and cultural expression. Maximum number of credits is 12; 4 credits each for three courses with different topics. Expected preparation: upper-division standing.

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 Insurgency 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 government in economic policy. Changes in foreign trade and in the international position of the U.S. Recommended prerequisites: Ec 201, 202.

† Also offered as Ec 456/556.

†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.

† Also offered as Ec 457/557.

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 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 spe-

cific 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. Maximum number of credits is 12; 4 credits each for three courses with different topics. Expected preparation: 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 457/557

Topics in Early Modern Europe (4)

Examines selected topics in the social, cultural, political and/or economic history of Europe in the early modern period (roughly 1515-1815). Topics will vary, but may include European financial history, the crisis of the seventeenth century, popular revolt, the royal state, and other topics. May be taken a second time for credit (maximum 8 cred-

its) with a different topic. Recommended: 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 459/559

Topics in Modern European History (4)

Examines a selected theme related to the history of modern Europe from (primarily) the 19th through the 20th centuries. Topics will vary, whether focusing internationally or on a single European nation, but will include the definition of Europe; dictatorship and sovereignty; nationalism and identity; society and the state; the experience of modern violence; trials and justice; world wars; comparative fascism; social and political transition, and war and society. Recommended: Hst 103 or 358; upper division standing for 459; graduate standing for 559. May be taken a second time for credit (maximum 8 credits) with a different topic.

***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 461/561

Topics in Jewish History (4)

Examines select aspects of Jewish history, focusing on one or more specific regions, periods, events, or concerns. Possible topics include: medieval and early modern Jewish history, ancient Israelite or rabbinic history and culture, Sephardic Jewry, history of Russian Jewry, and gender and Jewish history. Maximum number of credits is 12; 4 credits each for three courses with different topics. Expected preparation: 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.

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 467/567

Readings in Native American History (4)

Surveys the historiography of Native American history, with a special emphasis on ethno-historical theory and methods, disease and depopulation, contact and encounter, spirituality and missions, federal Indian policy, gender and social roles, environmental context, and frontier theory.

Recommended: one of the following: Hst 330, Hst 331, Hst 464/564.

***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**

Topics in Early Russian History (4)

Analysis of primary sources and historiographical debates on selected topics from Kievan Rus' to Muscovite Russia (800s-1600s). Expected preparation: Hst 375, 376, or 377.

***Hst 476/576**

Topics in Imperial Russian History (4)

Analysis of primary sources and historiographical debates regarding selected themes on social, political and cultural change in Russia's long 19th century. Maximum number of credits is 12; 4 credits each for three courses with different topics. Prerequisites: Hst 376. Expected preparation: Hst 377.

***Hst 477/577**

Topics in Soviet History (4)

Studies selected themes on the political, social, and cultural aspects of the Soviet experiment in Russia. Investigates the politics of socialism and controversies over socialist construction through primary sources and historiographical debates. Maximum number of credits is 12; 4 credits each for three courses with different topics. Prerequisites: Hst 377. Expected preparation: Hst 376.

***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 484/584

Topics in Middle Eastern History (4)

Explores such transnational topics in the history of the Middle East as Islam and modernity, the Middle East and the world economy, the Middle East and orientalism. Maximum number of credits is 12; 4 credits each for three courses with different topics. Expected preparation: upper-division standing.

***Hst 485/585**

Ottoman World (4)

An overview of Balkan and Middle Eastern history from late-medieval to early modern times (c. 14th-18th centuries). Major themes include the rise of the Ottoman Empire, the Ottomans and the early modern world (c. 1500-1800), evolution of the Ottoman state, law and religion, economy and society, and popular culture and lifestyle. Expected preparation: upper-division standing.

Hst 486/586

Modern Turkey (4)

A study of the formation and evolution of the Turkish Republic. Coverage runs from the late-Ottoman legacy (19th century) to an overview of the republican period (since 1923). Discussion of authoritarianism and democratization, religion and secularism, nationalism and minorities, migration and urbanization, and relations with Europe and America. Expected preparation: 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 mat-

ter 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 509

Practicum (Credit to be arranged.)

Hst 514

Graduate Research Colloquium (1)

Provides an opportunity for graduate students in history to engage in presentation and discussion of each other's work under faculty guidance and to gain exposure to current developments in historical scholarship through presentations of faculty research. May be repeated for credit; however, only a maximum of three credits may be applied to graduate degree requirements. Expected preparation: matriculation in graduate program in History.

Interdisciplinary Studies: Arts & Letters, Liberal Studies, Science, Social Science

**491E Neuberger Hall
503-725-3822**

B.A., B.S.

Arts and Letters, Liberal Studies, Science,
and Social Science

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 Interdisciplinary Studies and Liberal Studies.

Students interested in Interdisciplinary Studies will complete their major requirements by taking a concentration of courses in the arts and letters or science or social science academic areas. Students interested in all three categories (arts and letters, science, and social science) major in Liberal Studies by taking upper division courses across all three categories.

Outside of the requirement that Interdisciplinary Studies and Liberal Studies students take Wr 323 or a Writing Intensive Course (WIC), there are no specific courses required for the Interdisciplinary Studies and Liberal Studies majors. To take full advantage of the opportunities afforded these majors, students should plan a program which includes a coherent set of courses providing an in-depth study in the area of special inter-

est as well as providing enhancement of problem-solving and communication skills.

Undergraduate program

Advisers: K. DeVoll, K. Felipe, M. Leonard, L. Marsh, B. Alberts, J. Rousseau, P. Harrison, T. Lewis, M. Dyson.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Interdisciplinary Studies' undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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) communication, conflict resolution, English, world 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, native American studies, political science, psychology, religious studies, sociology, urban studies and planning, and women, gender, and sexuality 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 for a total of 56 credits.

	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
WR 323 or WIC course	4
Total	56

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, science and/or social science academic distribution area(s)	81†

†4 credits WR 323, or an approved Writing Intensive Course which can be included in the 81 upper-division requirements.

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.

Bilingual Teacher Pathway program

The Bilingual Teacher Pathway program is an initial teacher licensure program designed for bilingual paraprofessionals working in local partner school districts. The program consists of 42-45 credits and is offered at both the graduate and undergraduate levels. Undergraduate credits can be applied toward the bachelor's degree in Liberal Studies. www.pdx.edu/cilbtp.

Graduate programs

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 65. 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) program. 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.

Courses

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.)

International Studies

341 East Hall
725-3455
www.pdx.edu/intl

B.A.
Minor
Certificate in Asian Studies
Certificate in European Studies
Certificate in Latin American Studies
Certificate in Middle East Studies
Certificate in Contemporary Turkish 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. Students can select a regional studies or an international development focus for the degree. 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.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for International Studies' undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 for more information.

Degree requirements

Requirements for major. In addition to the general University requirements for a degree found on page 33, majors must have third-year proficiency in an appropriate second language. Majors must complete a core curriculum of international studies courses; an individualized curriculum of connected learning courses; and courses in their areas of geographic concentration, to include:

	Credits
International Studies	30
Intl 201 Introduction to International Studies....	4
† Intl 2xx Introduction to Regional Studies	4
Intl 390 Foundations of Global Studies.....	4
‡ 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

† Students may double count Intl 2xx for the major and University Studies Sophomore Inquiry; a mentor section is required.

‡ Or Intl 397 for the Development Studies track. 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 a UnSt 421 Capstone from the INTL list of approved courses having a significant international component.

Connected Learning/ Intl Development Studies..... 20

At least 20 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 College of the Arts, and the College of Urban and Public Affairs.

Regional Focus 20

At least 20 upper-division credits from adviser-approved, area-specific courses appropriate to the student's regional focus. International Development Studies focus majors may, in consultation with an adviser, develop a bi-regional Focus.

Language

Three years, or equivalent proficiency, of language study in one language appropriate to the regional focus. For students taking courses at PSU, third-year proficiency is defined by successful completion of the terminal course in the third-year language sequence or completion of an upper division equivalent. The terminal course for most languages is 303.

Total: (plus from 0 to 38 depending on language study) 70

All courses used to satisfy the departmental major requirements (and minor or certificate 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 focus of study that a student selects. International Development Studies focus majors (IDS) complete advisor-approved IDS track courses and Intl 397.

Academic Adviser: Ari Douangpanya, 503-725-3455

Currently, five regions of concentration and a focus in International Development Studies are available:

Africa: Kofi Agorsah, adviser,
503-725-5080

Asia: 503-725-3455

Europe: Evguenia Davidova, adviser,
503-725-8992

Latin America: Stephen Frenkel, adviser, 503-725-5085

Middle East: Tugrul Keskin, adviser, 503-725-3455

International Development Studies:
Leopoldo Rodriguez, adviser 503-725-5085

General Advising: Kimberly Brown (Applied Linguistics), 503-725-8194; Birol Yesilada (Political Science), 503-725-3257

Contemporary Turkish Studies: 503-725-3257

Information on recommended courses is available from advisers and at www.pdx.edu/intl/forms-lists. Majors should meet regularly with advisers beginning no later than the first term of their sophomore year; or first term after transfer.

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 demonstrating proficiency at the same level; and (2) complete 28 credits to include the following:

	Credits
International Studies	
Intl 201 Introduction to International Studies	4
Intl 390 Foundations of Global Studies.....	4
Intl 396 The United States and the World	4
Total	12
Connected/Regional Learning (adviser-approved area-specific or thematic courses).....	16
Total	28

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 Asian Studies, European Studies, Latin American Studies, Middle East, and Contemporary Turkish Studies. The specific courses needed for a certificate in each area differ; interested students should consult the International Studies Program in 341 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 characteris-

tics. The course of study is designed to broaden the student's understanding of a particular world area.

Students must take 24 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 28 credits of specified area courses.

Education Abroad. Students in both the International Studies and certificate programs are encouraged to consider overseas study opportunities available through the Office of Education Abroad, 101 East Hall and NSE (National Student Exchange), 105 Neuberger Hall. However, a study abroad experience is not required.

Courses

*Courses with an asterisk may not be offered every year.

Intl 201

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.

Intl 2xx

Introduction to (Region)

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 WS 331, may only be taken once for credit.

Intl 332

Islamic Movements in the Contemporary Muslim World (4)

An overview of Islamic political movements in the contemporary Muslim world. Examines the roots and development of Islamic movements in Muslim-populated societies in the context of Social Movement Theory and globalization. Particular attention to the rise of Islamic political movements from their position as a local and regional force to a global political movement.

Intl 341

Environment and Development in Latin America (4)

Examines the interrelationships between environment and development in Latin America from an interdisciplinary perspective. Explores issues of sustainable development including agriculture, deforestation, trade, urbanization, ecotourism and migration.

Intl 342

Globalization and Conflict in Latin America (4)

Examines issues of globalization and its impacts on regional conflict in contemporary Latin America. Topics include political systems, trade, poverty, inequality and human rights.

Intl 351

The City in Europe: Social Sciences (4)

Examines the challenges of modern urban life since the eighteenth century in Europe and the various intellectual, political and social responses to industrialization and modernity that shape European identity. Organized around three broad topics: the city as a locus of power and forms of resistance; multifaceted urban culture; and globalization's impact on city life.

Intl 352

The City in Europe: Humanities (4)

Examines the challenges of modern urban life since the eighteenth century in Europe through the lens of place and character in major European novels. Authors identified with specific cities (e.g., Orwell and Barcelona, Mann and Venice, Isherwood and Berlin, Woolf and London) are chosen to explore the evolution of European identity and major historical, political, and cultural developments of the modern period.

Intl 362

Amazon Rain Forest (4)

Examines different ways in which the Amazon has been perceived through time. This course is the same as Hst 362; course may only be taken once for credit.

Intl 372

Sociology of Africa: Post-colonial Studies of Africa (4)

Study of the social, political, and economic dimensions of imperialism in twentieth century Africa from the perspective of post-colonial studies.

Intl 390

Foundations of Global Studies (4)

Exploration of key theories of global, social, and cultural processes including positivism, liberalism, and Marxism through multiple approaches including non-Western and comparative perspectives. Prerequisites: Intl 201.

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 397

U.S. Policy and International Development (4)

Explores relation between U.S. domestic and foreign policy on the formulation of the concept of development, its theoretical evolution and application in developing nations. Utilizes a historical approach starting with colonialism and ending with topics of contemporary salience such as trade, financial liberalization and sustainability.

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. Prerequisites: Intl 390

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**

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; 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 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 472
Media and International Relations (4)**

Examines the role of media (traditional and new media), historical and contemporary, in the conduct of international relations and in the reporting and representations of national and international politics and cultures. Prerequisites: junior standing.

**Intl 490
Global Sustainable Development (4)**

An examination of key concepts of sustainable development, policies associated with sustainable development, and the power relations inherent to these policies. The subject matter is approached from an interdisciplinary perspective. Expected preparation: Intl 397.

**†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.

**308 Neuberger Hall
503-725-8449
www.pdx.edu/judaic/**

Minor in Judaic Studies

Undergraduate programs

Requirements for minor in Judaic studies

Portland State University offers a conceptually structured yet flexible undergraduate minor in Judaic Studies. Students completing the minor will have gained exposure to the study of Jewish history and culture in a variety of national and international contexts. Students completing the minor are required to take Introduction to Judaism and at least one term of the two-term sequence in Jewish history, as well as coursework dealing with Jews and Judaism in Europe, Israel, and the United States, the major historical centers of Jewish life in the modern period. Students are also required to take coursework focusing on Jewish history or culture prior to the modern period (defined as 1700 and earlier). Through exploration of Jewish culture, Jewish contributions to other cultures, and the impact of modernity on national, ethnic, and religious

identity, students will have broadened and deepened their education, better preparing them for our interconnected world of diverse cultures and religions.

Students undertaking the minor in Judaic Studies at PSU may be eligible for the Sara Glasgow Cogan Scholarship.

To earn a minor in Judaic studies a student must complete 28 credits, at least 16 credits of which must be upper-division courses, and at least 12 credits of which must be taken in residence at PSU. These 28 credits must include the following:

	Credits
JSt 201 Introduction to Jews, Judaism, and Modernity	4
Area electives (see below)	12
Advisor-approved electives (see below)	12
Total	28
Area electives must include at least 4 credits of coursework focusing on each of the following categories:	
Jewish history/culture in the United States (e.g., Hst 344)	4
Jewish history/culture in the State of Israel (e.g., Eng 330)	4
Jewish history/culture prior to 1700 (e.g., Hst 461)	4
Subtotal	12

For a complete list of approved area electives, contact the program adviser Michael Weingrad at weingrad@pdx.edu.

Adviser-approved electives may include up

to 4 credits of coursework not on the partial list of approved electives below, but which has a conceptual, topical, or methodological relevance to the discipline of Judaic studies. Partial list of courses that may be used to satisfy requirements:

Eng 318 The Bible as Literature
Eng 330U Jewish and Israeli Literature
Heb 203, 301 or higher (up to 8 credits)
Hst 344U Jews and Judaism in America Since World War Two
Hst 461/561 Topics in Jewish History
JSt 399 Special Studies
JSt 401 Research
JSt 405 Reading and Conference
JSt 407 Seminar
JSt 409 Practicum
JSt 410 Selected Topics

The program adviser will have a current list of additional approved electives, which includes appropriate topics courses (e.g., Eng 308 Literature of the Holocaust, Hst 407 Jewish Women in U.S. History, etc.).

For information about special by-arrangement courses, and for-credit academic internship opportunities with local cultural and community institutions such as the Oregon Jewish Museum, contact the program adviser.

Judaic Studies

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Judaic Studies' undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Courses

JSt 201
Introduction to Jews, Judaism, and Modernity (4)
 Provides a historical and conceptual account of the Jewish encounter with modernity. Primary emphasis on enlightenment and post-enlightenment transformations in western and eastern Europe, including emancipation, religious reform, Hasidism, and Zionism. Topics include the Holocaust, the rise of major Jewish centers in the United States and the State of Israel, and Sephardic and Middle Eastern Jewish encounters with modernity.

JST 399
Special Studies (1-4)
JST 401
Research (1-6)
JST 405
Reading and Conference (1-6)
JST 407
Seminar (1-4)
JST 409
Practicum (1-8)
JST 410
Selected Topics (1-4)

334 Neuberger Hall
503-725-3621
www.pdx.edu/math/

B.A., B.S. in Mathematics
 Minor in Mathematics
 Minor in Mathematics for Middle School Teachers
 Teacher Licensing Requirements
 Graduate Certificate for Middle School Mathematics Teachers
 Graduate Certificate in Applied Statistics
 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.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Mathematics and Statistics' undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

In order to help students plan their programs the Fariborz Maseeh Department of Mathematics and Statistics 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 261 Introduction to Linear Algebra.....	4
Mth 254 Calculus IV	4
Mth 256 Differential Equations	4
Mth 271 or CS 161.....	4
Mth 311, 312 Advanced Calculus.....	8
Mth 344 Group Theory	4
One of the following:.....	3-4
Mth 338 Modern College Geometry	
Mth 345 Ring and Field Theory	
Mth 346 Number Theory	
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
Total	61-67

† Approved electives are Mth 313, 322, 324, 338, 343, 345, 346, 356, 411, 412, 413, 420, 421, 422, 423, 424, 425, 427, 428, 430, 431, 432, 433, 434, 435, 436, 440, 441, 442, 443, 444, 445, 449, 451, 452, 453, 457, 458, 461, 462, 467, 468, 470, 471, 472, 477, 478, 481, 482, 483, 484, 485, 486, 487, 488; Stat 451, 452, 461, 462, 463, 464, 465, 466, 467, 468. 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.

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, 427, 428, 430, 451, 452, 457, 458, 470, 477, 478.

Option II—Graduate School

Preparation. Recommended electives: Mth 411, 412, 434, 435, 436, 441, 442.

Option III—Statistics. Recommended electives: Stat 461, 462, 463, 464, 465, 466, 467, 468.

Option IV—High School Teaching

Recommended electives: Mth 338, 346, 356, 486, 488; Stat 461, 462; Psy 311; Ed 420. See Teaching Licensing Requirements below.

Option V—Actuarial Science

Recommended electives: CS 161; Mth 451, 452; Stat 461, 462, 463, 464, 465, 466, 467, 468; SySc 520, 521, 522.

Honors Track in Mathematics and Statistics

The Honors Track in Mathematics and Statistics offers an opportunity for outstanding mathematics majors to engage in independent research under the supervision of a faculty member. Students who successfully complete the honors track will receive notice of this distinction on their academic transcripts and on their diplomas.

The requirements for admission to the Mathematics and Statistics Honors Track are:

- (1) Completion of 12 credits in the Fariborz Maseeh Department of Mathematics and Statistics, 4 of which should be at a 300 level or above; (
- 2) Have a minimum cumulative GPA of 3.5 points and a minimum GPA of 3.67 points in the Mathematics major;
- (3) Complete application form submitted to the Fariborz Maseeh Department of Mathematics and Statistics no later than three quarters before graduation.

The Mathematics and Statistics Honors Track requirements for graduation are:

Mth 251, 252, 253, 254, 261, 256, 311, 312, 344.

One of the following: Mth 338, 345, 346, 444.

One of the following: Mth 271, CS 161.

Two approved 400 level sequences.

One approved elective course.

Mth 401- Honors project (3 credits).

The chairman of the Department of Mathematics and Statistics, in consultation with faculty, will assign the students a faculty adviser to guide their research. This research topic will be at a 400 level or above and have not been discussed or presented in courses the students have taken. The written project should be approved by the chairman of the department. Concluding the work, the students will give an oral presentation of the Honors project to faculty and students.

Students must have a cumulative GPA no lower than 3.5 points and a GPA no lower

than 3.67 points in the major.

No mathematics or statistics courses taken under the undifferentiated grading option are acceptable towards fulfilling the requirements for the Mathematics and Statistics Honors Track.

The chairman and an undergraduate adviser will monitor the progress of the students accepted in the Mathematics and Statistics Honors Track. If this progress and/or performance are found to be unsatisfactory and if corrective actions cannot be identified, the students will be dropped from the Mathematics and Statistics Honors Track (the students may opt out to pursue a regular mathematics major or to select another major).

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 261 Introduction to Linear Algebra.....	4
Mth 254 Calculus IV	4
Mth 311 Advanced Calculus or Mth 344 Group Theory	4
‡Three approved elective courses.....	9-12
Total	33-36

‡ Approved electives for the Minor in Mathematics are Mth 256, 311, 312, 344 or any course approved as an elective for major credit.

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
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 B-, P, or above count toward satisfying the mathematics requirements for teacher licensing for the School of Education.

Secondary education. Students planning to earn a secondary teaching license in mathematics must obtain a recommendation for admission to the GTEP from the Fariborz Maseeh Department of Mathematics and Statistics. 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 64.

Elementary education. Students planning to earn an elementary teaching license must complete Mth 211, 212, 213 before admission to GTEP.

Graduate programs

The Fariborz Maseeh 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 Mathematical Sciences, 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 Fariborz Maseeh Department of Mathematics and Statistics at Portland State.

Degree requirements

University master's degree requirements are listed on page 65. 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.

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.

Doctor of Philosophy in mathematics education. The Fariborz Maseeh 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 mathemat-

ics 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 Fariborz Maseeh 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 Fariborz Maseeh Department of Mathematics and Statistics, and for general information related to the Systems Science Ph.D. degree, see page 198.

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. Expected preparation: Passing at the necessary level on the mathematics placement test (see Math

Department webpage at pdx.edu/math for information).

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. Prerequisites: Completion of Mth 70 with a grade of C- or above within the last year, or passing at the necessary level on the mathematics placement test within the last year (see Math Department webpage at pdx.edu/math for information).

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. Prerequisites: Completion of Mth 95 with a grade of C- or above within the last year, or passing at the necessary level on the mathematics placement test within the last year (see Math Department webpage at pdx.edu/math for information).

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. Prerequisites for Mth 111: Completion of Mth 95 with a grade of C- or above within the last year, or passing at the necessary level on the mathematics placement test within the last year (see Math Department webpage at pdx.edu/math for information). Prerequisites for Mth 112: Completion of Mth 111 with a grade of C- or above within the last year, or passing at the necessary level on the mathematics placement test within the last year (see Math Department webpage at pdx.edu/math for information).

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. Prerequisites for Mth 211: Completion of Mth 95 with a grade of C- or above within the last year, or passing at the necessary level on the mathematics placement test within the last year (see Math Department webpage at pdx.edu/math for information).

Prerequisites for Mth 212, 213: Mth 211.

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. Prerequisites for Mth 251: Completion of Mth 112 with a grade of C- or above within the last year, or passing at the necessary level on the mathematics placement test within the last year (see Math Department webpage at pdx.edu/math for information).

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. Prerequisites: Completion of Mth 112 with a grade of C- or above within the last year, or passing at the necessary level on the mathematics placement test within the last year (see Math Department webpage at pdx.edu/math for information).

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 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 I, II (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 254 and Mth 311.

Mth 322
Applied Partial Differential Equations (4)
Introduction to equations of mathematical physics, in particular, linear and nonlinear advection equation, wave equation, initial and boundary value problems, method of characteristics, separation of variables. Prerequisites: Mth 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 252. 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; Lebesgue measure and integration; the Stone-Weierstrass and Baire category theorems; Fourier Series; elements of functional analysis. Courses must be taken in sequence. Prerequisite: Mth 312.

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 I, II (3, 3)

Differential geometry of curves and surfaces; elementary Riemannian geometry; the Gauss-Bonnet theorem; applications from mechanics and field theory. Courses must be taken in sequence. Prerequisite: Either Mth 421 or both Mth 254 and Mth 256.

Mth 427/527, 428/528

Partial Differential Equations I, II, (3, 3)

Solution techniques, qualitative analysis and applications: separation of variables, eigenfunction expansion, Sturm-Liouville problems, Green's functions, Fourier transform solutions, finite difference and finite element methods. Courses must be taken in sequence. Prerequisites: Mth 256, Mth 253/254. Prior knowledge of PDEs (Mth 322) is recommended, but not required.

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 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. Courses must be taken in sequence.

Prerequisites: knowledge of a programming language such as MATLAB or C/C++, Mth 253 and Mth 261.

Mth 456/556

Topics in Combinatorics (3)

Selected topics from: permutations, combinations, partitions, generating functions, inclusion/exclusion, recursion, Polya counting, block designs, orthogonal polynomials, and error-correcting codes. With departmental approval may be repeated for credit. Prerequisites: MTH 356 or CS 251.

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 or Stat 243.

Mth 461/561, 462/562

Graph Theory I, II (3, 3)

Topics in graph theory, including connectivity, matchings, graph algorithms, network flows, graph matrices, isomorphisms, Eulerian and Hamiltonian graphs, spanning trees, decompositions, shortest paths, the matrix-tree theorem, colorings of graphs, planarity and embeddings, Kuratowski's theorem, matroids, and selected applications. Courses must be taken in sequence. Prerequisites: Mth 261, 356.

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 477/577, 478/578

Mathematical Control Theory I, II (3, 3)

Mathematical foundations of linear time invariant control systems. Controllability, observability, stabilizability, feedback. Elements of the calculus of variations and optimal control. Dynamic programming. Pontryagin maximum principle. Applications. Prerequisites: Mth 256. Expected preparation: Mth 253, 254.

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 math major credit. Enrollment is limited to pre-service and in-service mathematics teachers or permission of instructor.

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 math major credit. Enrollment is limited to pre-service and in-service mathematics teachers or permission of instructor.

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

Discrete Mathematics for Mathematics Teachers (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. Applications directed to teaching of Discrete Mathematics at the high school level. With departmental approval may be repeated for credit. Prerequisite: at least two upper-division courses approved for math major credit. Enrollment is limited to pre-service and in-service mathematics teachers or by permission of instructor.

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 112, 212, 213.

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 112, 212, 213.

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 112, 212, 213.

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 112, 212, 213.

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 112, 212, 213.

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: Mth 112, 212, 213.

Mth 497/597**Mathematics in the Middle School Classroom (3)**

A survey of mathematics taught in the middle school grades, with focus on both content and pedagogical recommendations of the National Council of Teachers of Mathematics. Not approved for major credit. Available for graduate

credit toward the graduate certificate program in mathematics for middle school teachers.

Prerequisites: Mth 112, 212, 213.

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 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 661, 662, 663**Algebraic Graph Theory I, II, III (3, 3, 3)**

Topics selected from algebraic and spectral graph theory, including automorphism groups, transitivity, primitivity, homomorphisms, generalized polygons, designs, projective planes, cores, fractional colorings and cliques, spectral decomposition, eigenvalue interlacing, strongly-regular and distance-regular graphs, line graphs, root systems, graph laplacians, graph polynomials, and graph-theoretic link invariants. Courses must be taken in sequence. Prerequisite Mth 462/562.

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 105****Elementary Data Analysis (4)**

A course in exploration of data analysis and basic statistical topics. May include descriptive statistics, graphical and tabular summaries, computer software, confidence intervals, correlation and regression. Prerequisites: Completion of Mth 95 with a grade of C- or above within the last year, or passing at the necessary level on the mathematics placement test within the last year (see Math Department webpage at pdx.edu/math for information).

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 non-technical 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. Prerequisites for Stat 243: Completion of Mth 95 with a grade of C- or above within the last year, or passing at the necessary level on the mathematics placement test within the last year (see Math Department webpage at pdx.edu/math for information).

Prerequisites for Stat 244: Completion of Mth 95 with a grade of C- or above within the last year, or passing at the necessary level on the mathematics placement test within the last year (see Math Department webpage at pdx.edu/math for information).

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. Prerequisites: Mth 252.

Stat 461, 462, 463**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. Prerequisites: 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 261 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 467/567, 468/568 (3,3)**Applied Probability I, II**

Basic concepts of probability, conditional probability, conditional expectation, discrete-time Markov chains, branching processes, Poisson processes, continuous-time Markov chains, birth and death processes, queues and inventory, renewal processes. Courses must be taken in sequence. Prerequisite: Stat 461/561 or Stat 451/551.

Stat 470/570**Statistical Consulting (Credit to be arranged.)**

Introduction to techniques and methods of statistical consulting. Faculty supervised consulting ses-

sions 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 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 561, 562, 563**Mathematical Statistics I, II, III (3, 3, 3)**

Taught at a higher level than Stat 461, 462, 463. Provides a solid foundation in the theory and methods of statistical inference. Topics include conditional distributions, functions of random variables, sampling distributions, order statistics, convergence in distribution and convergence in probability, central limit theorems, sufficiency, point estimation, confidence intervals, and testing of statistical hypotheses, most powerful tests, likelihood ratio tests, categorical data analysis, regression, nonparametric methods, and Bayesian inference. Prerequisites: Stat 462 or equivalent.

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 261.

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 580
Nonparametric Methods (3)**

Focus on standard nonparametric methods useful for the analysis of experimental data with minimal model assumptions. Topics include one and two-sample problems, one and two-way analysis of variance, multiple comparisons, rank correlation,

estimation and confidence intervals, theory of U-statistics, permutation tests, Bootstrap, Monte Carlo power simulation studies. Prerequisites: Stat 462 or Stat 452/552.

**Stat 601
Research (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 563.

Philosophy

**393 Neuberger Hall
503-725-3524
www.pdx.edu/philosophy/**

B.A., B.S.

Minor

Minor in History and Philosophy of Science

For the requirements for this interdisciplinary minor, see History

Undergraduate program

Philosophy is the study of the most fundamental issues concerning reality, knowledge, and value. Its fields include metaphysics (ultimate nature of reality), epistemology (nature of knowledge and reasoning), and ethics (principles of moral obligation).

Through the study of the Philosophy Department's curriculum, students learn about the historical traditions and contemporary theories in these fields. Philosophy also examines the basic concepts, principles, and arguments of the major scientific and intellectual disciplines concerned with the study of domains of reality, features and practices of knowledge, and social values and arrangements. These topics are addressed in areas such as philosophy of science, philosophy of mind, philosophy of language, philosophy of law, political philosophy, and philosophy of religion.

The study of philosophy enriches students' lives as metaphysical, epistemological, and ethical reflection is essential to individual development and cultures across time and place. Moreover, philosophy enhances skills of abstract thinking, clear argumentative writing, careful reading and analysis of texts,

and oral argument. Philosophical training is then valuable in almost any area of life and any occupation that requires examination and analysis of problems, critical evaluation of alternative solutions, and rational advocacy of conclusions and courses of action. Philosophy is also an excellent undergraduate major for pre-professional students: philosophy majors outscore all other majors on the Graduate Record Exam (GRE's) and receive scores among the highest on the LSAT's, GMAT's, and MCAT's. It is ideal for those who aspire to work in the legal profession and fitting for students planning careers in medicine. And finally, as the quintessential interdisciplinary course of study, philosophy is a wonderful second-major and compliments the course of study in the physical and social sciences, arts, and humanities.

Degree Maps and Learning Outcomes

To view the degree map and expected learning outcomes for Philosophy's undergraduate degree, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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

Phl 201 Introduction to Philosophy	4
Phl 300 Philosophical Methods and Concepts.....	4
Phl 301 Ancient Philosophy.....	4
Phl 303 Early Modern Philosophy.....	4
Phl 308 Elementary Ethics	4
Phl 324 Introduction to Formal Logic.....	4
Two courses taken from the following (historical figures):	8
Phl 414, 415, 416, 417, 419, 420, 451	
Four courses taken from the following (thematic courses):	16
Phl 423, 424, 432, 433, 445, 446, 447, 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 Department's Honors

Option. The Philosophy Department's Honors Option is designed to challenge and enrich the educational experience of outstanding philosophy majors and, with a successful completion, recognize and honor their achievements. Application process: students must apply to be admitted. To apply, fill out an application (available at the department office) and submit it together with a DARS report and a writing sample to the honors option coordinator. 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. Requirements for receiving departmental honors include: completion of Honors Seminar (Phl 485) and Honors Thesis (Phl 403) with receipt of A- or above in both courses; minimum GPA of 3.5 in philosophy courses at graduation; at least 60 credits in philosophy. 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 Ancient Philosophy	4
Phl 303 Early Modern Philosophy	4
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 201-212 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; its practice and major areas of study.

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 reason; the problem of evil. Note: this is not a class in comparative religion or the history of religion.

Phl 212

Philosophy in Literature (4)

An introduction to traditional philosophical issues as they appear in literature, especially in fiction.

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. Not recommended as a first course in philosophy.

Phl 301

Ancient Philosophy (4)

Study of Ancient Greek philosophy with a primary focus on the philosophies of Plato and Aristotle. Key topics include form, matter, substance, and causation.

Phl 302

Medieval Philosophy (4)

Study of philosophy during the Medieval period. Topics include developments in logic, role of faith and reason in knowledge, and use of Platonic and Aristotelian philosophy. Course readings include Christian, Jewish, and Islamic authors.

Phl 303

Early Modern Philosophy (4)

History of Western philosophy during the Early Modern period (17th and 18th centuries) from

Descartes to Kant. Topics include nature of knowledge and reality; theories of human nature.

Phl 304

Nineteenth Century Philosophy (4)

Study of continental European philosophy from Hegel to Nietzsche. Topics include post-Kantian idealism, the "social turn" in epistemology, communitarian ethics, reactions to the crisis in Christianity, and the radical critiques of modern social and political institutions.

Phl 305

Analytic Philosophy (4)

Examination of the analytic philosophical tradition from Frege and Russell through early Wittgenstein and the Logical Positivists to Quine. Major topics include theories of meaning and the interrelationships among language, logic, and knowledge.

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 307

Science and Society (4)

Introduction to the philosophy of social science including social epistemology. Topics include the nature of explanation in social science, the role of normative and hermeneutical principles in it, and the influence of social processes on scientific knowledge.

Phl 308

Elementary Ethics (4)

General introduction to ethical theories (relativism, egoism, utilitarianism, and Kantianism) and topics such 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.

Phl 309

Business Ethics (4)

Study of the ethical aspects of practices and organizational structures in the business world such as: 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)

Study of our moral responsibilities with respect to the environment (e.g., treatment of non-human animals, rights of animals, trees, rivers and possibly our planet) in light of some of the central environmental problems (e.g., population growth, global warming, and endangered species).

Phl 311

The Morality of Punishment (4)

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)

Critical examination of classic philosophical schools of thought and methodologies from a feminist perspective which emphasizes the importance of external context in all intellectual pursuits and underscores the interconnections between theory and practice including values.

Phl 313

Life and Death Issues (4)

Study of moral problems dealing with life and death issues including abortion, euthanasia, the death penalty, starvation, and war.

Phl 314

Computer Ethics (4)

Examines the moral principles and judgments relevant for computer-related practices. Topics include: ethical aspects of new information technologies; are technologies value-laden; freedom, privacy, and control; security, reliability, and professional responsibilities; 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.

Phl 316

Social and Political Philosophy (4)

Survey of main theories of social and political justice (utilitarian, liberal, equalitarian, communitarian, and libertarian) through classic and modern representatives.

Phl 317

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 318

Philosophy of Medicine (4)

Examination of central philosophical issues that arise within the theory and practice of medicine such as: the relationship of medicine to basic sciences, the roles played in medicine by normative concepts such as health and illness, the nature of causal reasoning in medicine, and the nature of diagnostic categories in medicine and psychiatry.

Phl 319

Introduction to Asian Philosophy (4)

A study of different systems of eastern philosophy through the main classical texts drawn from Buddhism, Taoism, and Confucianism. Topics include: the nature of reality, the self, causality, language, knowledge, and ethics.

Phl 320

Critical Thinking (4)

Designed to improve reasoning and skills of critical assessment of information. 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.

Phl 321

Practical Epistemology (4)

Study of criteria for knowledge-claims based on sources such as: memory, perception, eyewitness testimony, expert testimony, and medical and scientific experts.

Phl 322

Minds and Machines (4)

Study of philosophical aspects of artificial intelligence including its functionalist ontology. Topics include the nature of computation, learning, and intelligence and the role of consciousness in thinking and behavior. Expected preparation: 8 credits in any science or 8 credits in any philosophy courses.

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. Primary emphasis 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 330

Language, Representation, and Reality (4)

An introduction to theories of meaning and their central topics: nature of representation and the referential capacity of language, role of use in meaning, and the role of language in thought and experience.

Phl 331

Philosophy of Education (4)

Exploration of the nature, aims, and value of education by situating it in its historical and contemporary philosophical context and perspectives.

***Phl 332**

Intentionality, Phenomenology, and Existentialism (4)

Examination of the Kantian roots of intentionality (i.e., that our conscious acts are about or directed toward objects) and subsequent theories and philosophical use of intentionality. Recommended prerequisite: 8 credits in philosophy.

Phl 333

Philosophy of Law (4)

Examines the nature of law, legal obligation and legal interpretation. Is law a part of morality, or nothing more than an expression of social power? When are we permitted or required to disobey the law? What is the proper methodology for interpreting laws and deciding cases? Do judges discover or create law? Readings include classics of jurisprudence (e.g., Austin, Hart, Dworkin) as

well as judicial opinions in a selected topic.

Recommended prerequisites:

Phl 308, 311 or 316.

Phl 350

International Ethics (4)

Introduction to central moral principles relevant for international relations. Topics include military, humanitarian, and covert intervention, economic sanctions, development assistance and human rights.

***Phl 355**

Morality and Health Care (4)

Examination of central topics of the ethics of health care such as euthanasia, abortion and equitable medical allocation.

***Phl 360**

American Philosophy (4)

Study of American pragmatism through some of its major representatives (e.g., Dewey, Peirce, James, and Mead), its intellectual and cultural context, and its influence on contemporary American philosophers.

Phl 365

Atheism (4)

Examination of atheist philosophy including secularism in ethics and politics, naturalism in epistemology and metaphysics, and contemporary naturalistic accounts of religion and faith-based beliefs.

Phl 369

Philosophy of Sex and Love (4)

An examination of the central philosophical issues emerging from a reflection on sex and love such as: possible essence of heterosexuality, homosexuality, and asexuality; morality of different expressions of sex and love such as sadomasochism and polygamy; role of sexuality and romantic love in our self-conception; influence of conceptual sources on our experiences of sexuality and love.

Phl 370

Philosophy of Work and Leisure (4)

Role and nature of work and leisure in theories of the good life and central social and political practices.

Phl 371

Philosophy and the City (4)

Explores the role and nature of the city in the history of philosophy and especially social and political theory and the philosophical bases of contemporary urban theory including political, civic, sustainable, and aesthetic ideas of the city.

Phl 375

Food Ethics (4)

An introduction to ethical issues surrounding food choices including the fairness of food markets, the moral status of animals, and our obligations to the hungry.

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 and topics such as theory of forms, moral philosophy, political philosophy, being, and the nature of philosophy. Recommended prerequisite: Phl 301.

***Phl 415/515**

Aristotle (4)

Study of some of the works of Aristotle and topics such as substance, essence, categories, cause, and practical reason. Recommended prerequisite: Phl 301.

***Phl 416/516**

The Rationalists: Descartes, Leibniz, Spinoza (4)

Study of selected works of 17-18th century philosophers who maintained that knowledge is primarily based in reason (e.g., Descartes, Leibniz, and Spinoza). Recommended prerequisite: Phl 303.

***Phl 417/517**

The Empiricists (4)

Study of selected works of 17-18th century philosophers who maintained that knowledge is primarily based in sense experience (e.g., Locke, Berkeley, and Hume). Recommended prerequisite: Phl 303.

***Phl 419/519**

Kant (4)

Study of Kant's philosophy and topics such as necessary connection, the analytic-synthetic distinction, conceptions of science and metaphysics, relation between metaphysics and morality. Recommended prerequisite: Phl 303.

***Phl 420/520**

Wittgenstein (4)

Study of the major works of Wittgenstein and topics such as philosophical method, meaning, intention, understanding, necessity, and the nature of humans as language users. Recommended prerequisite: Phl 305.

***Phl 423/523**

Metaphysics (4)

Study of major systems of ontology (e.g., idealism, materialism) and traditional metaphysical issues (e.g., determinism, freedom, properties) including debates over the feasibility of the discipline of metaphysics itself (e.g., positivism and scientific realism).

***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, the mind, and logical and mathematical truths, etc.). Recommended prerequisite: 8 credits in philosophy.

***Phl 432/532**

Philosophy of Mind (4)

Study of the debates over the nature of mental states and our knowledge of them. Main topics are dualism and various forms of physicalism, behaviorism, mind-body identity theories, functionalism and eliminativism. Expected preparation: 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: Phl 305.

Phl 445/545*Advanced Ethics (4)**

A course in moral epistemology or "meta-ethics" dealing with topics such as: the distinction and connections between fact and value, "is" and "ought," and description and evaluation. Recommended prerequisite: Phl 308.

Phl 446/546**Topics in Ethics (4)**

Topics in contemporary moral philosophy, including (but not limited to) the relation between applied and theoretical ethics, the foundations of moral responsibility, virtues, and the role of outcomes in moral evaluation. Course may be repeated for credit toward major requirements with departmental approval. Expected preparation: Phl 308.

Phl 447/547**Topics in Social and Political Philosophy (4)**

An in-depth study of an important current issue (such as global justice, multiculturalism, or power) or figure (such as John Rawls, Jürgen Habermas, or Michel Foucault) in social and political philosophy.

Phl 449/549**Philosophy of Sustainability (4)**

Examination of the core philosophical issues that arise within the theory and practice of sustainability and across its three complementary dimensions: environmental, economic, and social. Prerequisites: junior standing.

Phl 451/551**Classical Figures (4)**

Intensive study of some classical figure such as Descartes, Spinoza, Leibniz, Nietzsche, Hegel. Course may be repeated for credit toward major requirements. Recommended prerequisites: 8 credits in philosophy.

Phl 460/560**Contemporary European Philosophy (4)**

In-depth study of a current theme (such as phenomenology, post-modernism, or post-structuralism) or topical figure (such as Habermas, Derrida, or Benjamin) of European, "Continental" Philosophy. Prerequisites: Junior standing or consent of instructor.

Phl 470/570*Philosophy of Science (4)**

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 their rationality such as theory-ladenness of observation, testing-holism, and the incommensurability of theory change. Recommended prerequisites: 8 credits in philosophy.

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, natural kinds, and relativism. Course may be repeated for credit towards major requirements. Recommended prerequisites: Phl 470 or 8 credits in philosophy.

Phl 474/574*Philosophy of Logic (4)**

Topics: validity, sentence-proposition, connectives, quantifiers, truth, paradoxes, logical necessity and possibility. Optional topics: metalogic, 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: an acquaintance with health care services.

Phl 485*Honors Seminar (4)**

Students conduct research and produce substantial written material on a topic, to be shared and critiqued. Recommended particularly for students considering graduate work in philosophy. Prerequisites: admission to the Department's Honors Option or instructor approval.

Physics

134 Science Building II**503-725-3812****www.pdx.edu/physics/**

B.A., B.S.

Minor

Secondary Education Program

M.A., M.S.

Ph.D. – Applied 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.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Physics' undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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, the environmental physics option, and the biomedical option.

In addition to meeting the general University degree requirements, the student must meet the following minimal departmental course requirements:

Standard Option

	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 General Physics Lab.....	3
Ph 311, 312 Introduction to Modern Physics.....	8
Ph 314, 315, 316 Experimental Physics I.....	12
Ph 322 Computational Physics.....	4
Ph 424 Classical Mechanics I.....	4
Ph 426 Thermodynamics and Statistical Mechanics.....	4
PH 431 Electricity and Magnetism I.....	4
Total in physics (minimum)	52-55
Mth 251, 252, 253, 254 Calculus.....	16
Mth 256 Applied Differential Equations and Mth 261 Applied Linear Algebra.....	8
One year of general chemistry: Ch 221, 222, 223, 227, 228, 229.....	15
Total	39

At least two of the following courses:

- PH 411 Introduction to Quantum Mechanics
- Ph 425 Classical Mechanics II
- PH 432 Electricity and Magnetism II
- PH 434 Introduction to Mathematical Physics
- PH 464 Applied Optics

Two courses in a related area of science or technology (biology, geology, additional chemistry, computer science, electrical circuitry or applied physics).....

Environmental Option

	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 General Physics Lab.....	3
Ph 311, 312 Introduction to Modern Physics.....	8
Ph 314, 316 Experimental Physics I.....	8
Ph 375 Climate Change and Human Life.....	4
Ph 426 Thermodynamics and Statistical Mechanics.....	4
PH 431 Electricity and Magnetism I.....	4
Choose one of the following courses: Ph 424, Ph 411, Ph 431, Ph 432, Ph 434, Ph 464, Ph 451, Ph 322.....	4
Choose one of the following courses: Ph 471, Ph 490, Ph 492.....	4
Total in physics (minimum)	52-55
Mth 251, 252, 253, 254 Calculus.....	16

Mth 256 Applied Differential Equations and Mth 261 Applied Linear Algebra.....	8
One year of general chemistry: Ch 221, 222, 223, 227, 228, 229.....	15
One year of principles of biology: Bi 251, Bi 252, Bi 253.....	15
Total	54

Choose 15 credits of electives from the following:
Bi 357, Bi 475, Bi 476, G 322, G 351, G 458, G 469, G 484, Geog 310, Geog 311, Geog 312, Geog 414, Ch 360, Ch 371, Ch 375, Ch 426, Ch 427, CE 371, ESM 221, ESM 222, ESM 320, ESM 321, ESM 322, ESM 324.
See advisor for substitutions.

Biomedical Option

	Credits
Required physics courses: Ph 201, 202, 203 General Physics OR Ph 211, 212, 213 General Physics with.....	12
Ph 214, 215, 216 General Physics Lab.....	3
Ph 311, 312 Introduction to Modern Physics.....	8
Ph 314, 316 Experimental Physics I, III.....	8
Ph 426 Thermodynamics and Statistical Mechanics.....	4
Ph 321 Current Electricity.....	4
PH 431 Electricity and Magnetism I.....	4
Ph 322 Computational Physics.....	4
Required in physics	47

At least three of the following electives in physics:

Ph 451 Electron Microscopy.....	4
Ph 464 Applied Optics.....	4
Ph 490 Biophysics.....	4
Ph 337 Biomedical physics.....	4
Please see the undergraduate adviser to register for the following OHSU courses: RTT 331 Radiation Therapy Physics I.....	4
RTT 430 Radiation Therapy Physics II.....	4
Upper division electives in physics (minimum)	12

Required non-physics courses:

Mth 251, 252, 253, 254 Calculus.....	16
Mth 256 Applied Differential Equations I.....	4
Mth 261 Introduction to Linear Algebra.....	4
Bi 251, 252, 253 General Biology.....	15
Ch 334, 335, 336 Organic Chemistry.....	12
Ch 337, 338 Organic Chemistry Lab.....	4
Ch 221, 222, 223 General Chemistry.....	12
Ch 227, 228, 229 General Chemistry Lab.....	3
Total in Math, Biology, Chemistry	70
Total required credits:	129

Other recommended courses:

Ph 315 Experimental Physics II.....	4
Ph 424 Classical Mechanics.....	4
Ph 432 Electricity and Magnetism II.....	4
Ph 434 Introduction to Mathematical Physics.....	4
Ch 350 Biochemistry.....	4
Ch 416, 417 Physical Chemistry of the Biosciences.....	8
Bi 336 Cell Biology.....	4
Bi 338 Introduction to Molecular Biology.....	4
Bi 341 Introduction to Genetics.....	4
Bi 301, 302, 303 Anatomy and Physiology.....	12
Bi 234 Elementary Microbiology.....	4

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.

Honors Track

Adviser: **E. Sànchez**

The Physics department's honors track is designed to challenge and enrich the educational experience of superior physics majors and, with a successful completion, recognize and honor their achievements. It is designed specifically for those students who plan to pursue graduate studies in physics or other disciplines that involve scientific research which is either experimental or theoretical in nature. Participation in the track is elective and because honors' studies involve a close mentoring relationship with faculty, students will need to coordinate their proposed research topic(s) with an appropriate faculty member.

SECONDARY EDUCATION PROGRAM

Adviser: **Andrew Rice**

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 311, 312 Modern Physics
- Ph 314, 315, 316 Experimental Physics
- Ph 322 Computational Physics
- Ph 464 Optics or Ph 426 Thermodynamics

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 offers the degrees of Master of Arts and Master of Science in Physics and Ph.D. in Applied Physics. 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 classical mechanics, quantum mechanics, electromagnetism, statistical mechanics, physics of condensed matter, atmospheric physics, and biophysics. Current research areas in theoretical and experimental physics include: statistical physics, surface physics (scanning tunneling microscopy, near-field optical microscopy, AFM, electron microscopy), and membrane biophysics (transport in biological and artificial membranes), materials physics, and global change science (climate change and atmospheric physics and chemistry).

The department also participates in the Earth, Environment, and Society PhD Degree Program in Areas of climate change and policy.

Degree requirements

University degree requirements are listed on page 65. Specific departmental requirements are listed below. The complete details of all M.A., M.S. and Ph.D. requirements are outlined in the Department of Physics Graduate Student Handbook and on the web at www.physics.pdx.edu.

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 as follows for thesis and non-thesis options:

Thesis Option

	Credits
Ph 617 Quantum Mechanics.....	4
Ph 631 Electrodynamics	4
Ph 624 Classical Mechanics	4
Ph 507 Seminar.....	3
Electives	24
Ph 503 Thesis	6
Total:	45

Non-Thesis Option

	Credits
Ph 617 Quantum Mechanics.....	4
Ph 631 Electrodynamics	4
Ph 624 Classical Mechanics	4
Ph 507 Seminar.....	3
Electives	24
Ph 504 Cooperative Education/Internship or	
Ph 506 Special Projects	6
Total:	45

Typically, a thesis involves research, 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 final oral exam are required

Doctor of Philosophy. All doctoral students must earn a minimum of 81 credits beyond the bachelor's degree. Candidates for the Ph.D. in Applied Physics must satisfy

requirements related to coursework, seminar, and a dissertation, including a minimum of 69 credits as follows:

Ph.D. in Applied Physics

	Credits
Ph 617, 618 Quantum Mechanics.....	8
Ph 631, 632 Electrodynamics	8
Ph 624 Classical Mechanics	4
Ph 585 Experimental Methods in Applied Physics.....	4
Ph 607 Seminar.....	6
Ph 603 Dissertation	27
Electives (all from one specialty area).....	12
Total:	69

Approved electives in the three specialty areas of Nanoscience and Materials Physics, Atmospheric Physics, and Biophysics are found in the Physics Graduate Student Handbook and on the web at www.physics.pdx.edu. Candidates for the Ph.D. in Applied Physics are required to pass the comprehensive examination, a prospectus examination, and write and orally defend a dissertation.

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, momentum, 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 214; for Ph 222, Ph 215; for Ph 223, Ph 216.

Ph 261, 262

General Astronomy (4, 4)

Introductory historical, descriptive, and interpretative 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 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 displays 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 333
Weather (4)

Introductory course in the atmospheric environment providing a comprehensive understanding of atmospheric structure and the changes over time that result in the weather we experience. Topics include: atmospheric moisture (fog, rain, clouds), atmospheric stability and cloud development, air pressure and winds, air masses and fronts, and hurricanes and tornados. This course is the same as Geog 333; course may be taken only once for credit. Recommended: upper division standing or Geog 210.

Ph 335
Wacky or Real: What Everyone
Should Know About Physics Scams (4)

The use and misuse of physics: beginning with a firm understanding of the strengths and weaknesses of the scientific method, analyzes how people veer away from it, resulting in pathological, junk, pseudo and fraudulent physics. Examples

such as magnetic therapy, perpetual motion, ESP, x-ray cures, and astrology are included. Recommended prerequisites: upper division standing.

Ph 337
Physics in Biomedicine (4)

The physics behind the most important medical instruments and technologies. A wide range of concepts from electromagnetism, optics, to quantum mechanics are used to explain the mechanisms behind ultrasound, endoscopy, optical microscopy, EKG, pacemaker, defibrillators, LASER eye surgery, microscopy, x-ray, radiation, CAT scan, PET scan, MRI, and more. Expected preparation: Ph 201, 203 or Ph 101, 102.

***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
Climate 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 382
Introduction to Nanoscience and
Nanotechnology (4)

Basic introduction to nanoscience and nanotechnology for all interested science, engineering and social science and humanities students.

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.

† Does not carry graduate credit for M.A., M.S. in physics.

Ph 424

Classical Mechanics I (4)

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 (4)

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. Additional special topics may include chaos theory and special relativity. Recommended prerequisites: Ph 424 and Mth 256.

† Does not carry graduate credit for M.A., M.S. in physics.

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.

† Does not carry graduate credit for M.A., M.S. in physics.

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, tech-

nology 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.

***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 473/573

Alternative Energies (4)

Starting with a review of global energy trends, this course will cover the major resources of alternative energies (hydropower, wave, tidal and wind energy, solar energy, nuclear fission and fusion), their characteristics, utilization and technology as well

as environmental and public impact. Special attention will be given to photovoltaics and solar cell technology. Market developments will also be analyzed based on simple models. Prerequisites: Ph 213 or Ph 223.

†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.

† Does not carry graduate credit for M.A., M.S. in 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.

† Does not carry graduate credit for M.A., M.S. in 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

Introduction to Nano(materials)-Science and -Engineering (4)

An introduction to nano(materials)-science and -engineering for students in physics, chemistry, geology, electrical and computer engineering, and mechanical and materials engineering. Nanoscale processes and devices and their applications. Recommended prerequisites: two specific advanced upper division science courses dependent on major, or consent of instructor.

***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 545
Microelectronic Device Fabrication I (4)
The principles of crystal growth and wafer preparation, ion implantation, doping and diffusion, and oxidation, including crystal structure, defects, heterogeneous chemical reactions, thermodynamics and kinetics of basic processes such as diffusion. Realistic process flows, physical metrology, device structure, electrical behavior and their trade-offs are discussed.

Ph 546
Microelectronic Device Fabrication II (4)
Emphasis: metallization and dielectrics. Metallization issues discussed include silicides, barrier layers, interconnects, multi-level metallization, and low-k dielectrics. Discussion of deposition and properties of various dielectric films. Epitaxial growth and properties of SOI and SiGe devices are covered. Computer simulations of device fabrication.

Ph 547
Microelectronic Device Fabrication III (4)
Electron beam, x-ray, EUV, and photolithography, including discussion of resist technology. Fundamentals and applications of plasmas for etching and deposition (e.g., high-density plasmas), including plasma damage. The limitations of fabrication and operation of nano-scale devices are discussed. Fabrication of a virtual device with specified electrical performance parameters.

Ph 585, 586
Experimental Methods in Applied Physics (4,4)
Introduction to modern instrumentation used in applied physics, focusing on nanoscience and materials, atmospheric physics, and biophysics, including theory and practice of the instruments. Prerequisite: admission to Ph.D program in Applied Physics, M.S. in Physics, or ESR Ph.D programs.

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 617, 618, 619
Quantum Mechanics (4,4,4)
A detailed discussion of the approximation models 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. Prerequisites: Ph 411/511, 424.

***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.

Pre-professional Programs

Portland State offers courses which meet the pre-professional 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 pre-professional programs are based on the graduation requirements of other institutions. All pre-professional students should check with an adviser to keep current on all recent changes and remaining requirements.

Pre-Professional Health Sciences Programs

503-725-3822,
Smith Memorial Student Union
Mezzanine, M305I
Advisers: M. Yates, M. Leonard, L. Marsh
Professional advisers in the College of Liberal Arts & Sciences Advising Center administer programs designed to support students' efforts to prepare for and apply to professional health sciences programs. Pre-professional health sciences programs at Portland State University are not majors. Rather, they are programs in which students take advantage of advising, coursework and

resources all designed to support and guide students' efforts to apply to undergraduate and graduate health sciences programs offered at other institutions. There are two types of pre-professional health sciences programs at Portland State – 1) transfer programs, and 2) bachelor's degree programs.

Transfer programs are those in which students complete a set of prerequisite courses at Portland State and then transfer to undergraduate professional health sciences programs at other institutions to complete their bachelor's degrees. The students' focus at Portland State is on fulfilling the admissions requirements of receiving institutions. Transfer programs include the following:
Clinical Laboratory Science
Dental Hygiene

Nursing

Radiation Therapy

Students choosing to continue at PSU, rather than pursue a pre-professional transfer program should meet with a faculty adviser to determine PSU graduation requirements.

Bachelor's degree programs are those designed to prepare students for masters and doctoral programs in the health sciences that require or recommend completion of a bachelor's degree prior to entry. However, pre-professional bachelor's degree programs at Portland State are not majors. Thus, students must a) select a major and fulfill Portland State's graduation requirements, and b) fulfill the prerequisite coursework required by the professional graduate programs to which they plan to apply. Majors commonly selected by pre-professional health sciences students include biology, chemistry, health studies, science, social science and psychology. However, a student can select any major offered at Portland State, as long as he or she completes both Portland State's graduation requirements and those of the receiving professional institutions. Professional schools do not prefer one major over another. They do look for students who perform well in prerequisite coursework and who are broadly educated; this can be accomplished with any major.

Professional health sciences programs that require or recommend that applicants earn a bachelor's degree before matriculating include the following:

- Allopathic and Osteopathic Medicine
- Chiropractic Medicine
- Dentistry
- Naturopathic Medicine
- Occupational Therapy
- Optometry
- Pharmacy
- Physical Therapy
- Physician Assistant
- Podiatric Medicine
- Veterinary Medicine

A typical pre-professional health sciences program, whether it is a transfer or a bachelor's degree program, includes but is not limited to coursework in mathematics, biology, chemistry, physics, English composition, and sometimes social science. However, coursework varies, depending on the admissions requirements of the institutions granting the professional degrees. It is essential that a student's academic program be planned with a College of Liberal Arts & Sciences health sciences adviser.

College of Liberal Arts & Sciences health sciences advisers work closely with students to facilitate their ability to plan coursework and activities strategically; to integrate personal, academic, and career goals; to develop the ability to evaluate options and make deci-

sions; and to be aware of the available resources across campus that can support their efforts to gain admission to professional health sciences programs. Advisers also provide students with guidance on selecting a major, preparing for graduate admissions tests such as the MCAT and GRE, organizing letters of evaluation, and writing the personal statement for admissions applications.

Postbaccalaureate Pre-Medical

Program. For students who already have a bachelor's degree but are lacking the specific science prerequisites for medical school, PSU offers a loosely structured postbaccalaureate program. Students have the option of completing the core sciences for the program in one year (including summer term) of intensive study. Postbaccalaureate students, with sufficient background, start with general chemistry in the summer and continue by taking year-long sequences of organic chemistry, biology, and physics simultaneously during the academic year. They then complete remaining prerequisite coursework such as genetics and biochemistry (required by Oregon Health & Science University School of Medicine) after applying to medical school. Some postbaccalaureate students elect to spread the pre-med curriculum out over two years and then apply. This enables them to have more coursework completed before applying and gives them more time to accrue relevant experience.

The postbaccalaureate pre-medical program is not a certificate program. Many postbaccalaureate pre-medical students do, however, easily complete a degree in science (science is an interdisciplinary major at Portland State) while completing prerequisite coursework for medical school. Most students need only add two to three classes to the pre-medical coursework in order to finish the degree. Pursuing a second degree while working on pre-professional coursework often enables postbaccalaureate students to receive financial aid for a longer period of time. For more information, contact a health sciences adviser.

Postbaccalaureate Pre-Dental

Program. For students who already have a bachelor's degree but are lacking the specific science prerequisites for dental school, PSU offers a loosely structured postbaccalaureate program. It typically takes postbaccalaureate students who are lacking all of the science prerequisites for dental school at least two years to complete the core coursework. Courses can be planned in a variety of ways. Postbaccalaureate pre-dental students should bring all previous college transcripts to an appointment with a health sciences adviser; after reviewing previous transcripts, the adviser will work with the student to develop a plan for completing the pre-dental coursework.

The postbaccalaureate pre-dental program is not a certificate program. Many postbaccalaureate pre-dental students do, however, easily

complete a degree in science (science is an interdisciplinary major at Portland State) while completing prerequisite coursework for dental school. Pursuing a second degree while working on pre-professional coursework often enables postbaccalaureate students to receive financial aid for a longer period of time. For more information, contact a health sciences adviser.

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**
503-725-3822, SMSU M305
Adviser: K. DeVoll

For Child and Family Studies Majors:
503-725-8241, Child and Family Studies Program, 306 Helen Gordon Child Development Center
Adviser: M. Penners.

Early childhood and elementary education: Students who want to be elementary teachers choose from a wide range of majors to complete their undergraduate degrees. Some traditional choices include an interdisciplinary major (such as arts and letters, science, social sciences, or liberal studies); specific disciplinary majors such as English or History (especially those wishing to teach at the upper elementary level); or Child and Family Studies. In addition to meeting with the departmental adviser, students should meet with the elementary education adviser by visiting the College of Liberal Arts and Sciences Advising Center, SMSU M305, (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, and on the GTEP Web site.

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 and 213 Foundations of Elementary Mathematics; Music 381 Music Fundamentals; Psy 311 Human Development; *Recommended:* Ed 420 Introduction to Education and Society; CI 432 Computer Applications for the Classroom; SPED 418 Survey of the Exceptional Learner (please see the Minor in Elementary Education below).

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.

Integrated Science

Advisers: M. Cummings

The integrated science endorsement is valid for teaching all science except biology, chemis-

try, or physics, and, thus, is the endorsement for teaching science in middle and intermediate schools. Additional science courses beyond the requirements for a major in general studies in science are required for the integrated science endorsement. Courses pertaining to Earth/Space, Life, and Physical Science Content Standards are required. Guidelines for a course of study for the integrated science endorsement include the following.

	Credits
Earth/Space Content Area:	20
8 credits of lower division geology with labs/field studies.	
12 credits upper division earth science courses distributed among geology, paleontology, geomorphology, oceanography, hydrology, weather and climate, planetary science, astronomy.	
Life Science Content Area:	15
Biology 251, 252, 253 with labs.	
Physical Science Content Area:	15
200-level General Physics with labs or General Chemistry with labs.	
Upper Division electives in Earth/Space, Life Science, and/or Physical Science Content areas:20 credits	
May be completed in one department. Minimum of 20 UD electives with science (chemistry, physics, geology, biology, environmental science) or math prerequisites.	
Mathematics and Statistics Content Area:	12
Statistics: Stat 243 Introduction to Probability and Statistics I (4).	
Eight credits from Math 111, 112, Introductory College Mathematics I, II (4,4), Math 251 Calculus I (4), Math 211, 212, 213, Foundations of Elementary Mathematic I, II, III (4, 4, 4)	
Psy 311, Human Development	4
Total Credits:	86

Basic Social Studies

Advisers: T. Bulman and J. Rousseau

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:

Student must complete a minimum of 12 credits each in History and Geography and 8 credits each in Economics and Political Science to receive a departmental recommendation to the GTEP. For further guidance please contact one of the advisers listed above.

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 B- in each course.

Equivalent courses sometimes are accepted in substitution for certain of those specified, upon prior approval of the social studies secondary adviser.

EDUCATION MINORS

Minor In Elementary Education

The Minor in Elementary Education is intended for students who plan to enter a graduate teacher education program and be licensed in Early Childhood/Elementary Education. While the minor is not a

requirement for admission to the PSU Graduate Teacher Education Program (GTEP), it does include all the prerequisites for admission to the program. Students seeking a license for early childhood and elementary education must complete a graduate-level licensure program. The Graduate School of Education provides the teacher licensure as part of the GTEP.

Degree Requirements Credits

Language Arts (7 credits)	
Lib 428 (3), Children’s Literature, K-5.....	3
Ling 233 (4), Language and Mind	4
Sciences (8 credits)	
G 355 (4), Geosciences for Elementary Educators..	4
Sci 311 (4) Teaching Everyday Science.....	4
Math (12 credits)	
Mth 211 (4), 212 (4), & 213 (4) Foundations of Elementary Mathematics.....	12
Education (7 credits)	
Ed 420 (4), Introduction to Education.....	4
SpEd 418 (3), Survey of Exceptional Learner.....	3
Social Studies (8 credits)	
Psy 311 (4), Human Development.....	4
Soc 337 (4), Minorities	4
Fine and Performing Arts (7 credits)	
Art 312 (3), Art in the Elementary School.....	3
Mus 381 (4), Music Fundamentals.....	4
Health (4 credits)	
PHE 250 (4), Our Community, Our Health OR PHE 365 (4), Health Programs for Children and Youth..	4
Total	53*

* The total may vary depending on the transfer of community college equivalent courses which carry, in some cases, fewer credits. A minimum of 18 credits must be upper-division. Only grades of C or above may be counted toward these requirements. Students must take all coursework for differentiated grades. At least 16 credits must be in residence at PSU. A minimum cumulative GPA of 2.5 in coursework is required.

Minor In Secondary Education

The Minor in Secondary Education is intended for students who plan to enter a graduate teacher education program and be licensed in Secondary Education. While the minor is not a requirement for admission to the PSU Graduate Teacher Education Program (GTEP), it does include the prerequisites and highly recommended courses for admission to the program. Students must also complete the content courses required by the department for the subject they plan to teach to apply to GTEP. Students seeking a license for secondary education must complete a graduate-level licensure program. The Graduate School of Education provides the teacher licensure as part of the GTEP.

Core Courses Credits

Ed 420 Intro to Education and Society.....	4
(30 hours practicum)	
CI 432 Computer Applications in the Classroom ...	3
Psy 311 Human Development	4
Soc 337 Minorities.....	4
SpEd 418 Survey of the Exceptional Learner	3
Electives (choose 2 classes) 7-10	
Anth 315 American Culture OR BSt 302 African Am. Exp. in the 20th Century OR ChLa 301 Chicano Latino Communities.....	4
CFS 485 Working with Diverse Families OR CFS 490 Sex and the Family.....	4

Lib 429 Young Adult Literature	3
Phl 331 Philosophy of Education	4
Psy 345 Motivation OR Psy 346 Learning	4
SpEd 460/UnSt 421 Outdoor Education/Recreation With Persons with Disabilities	6
Or adviser approved elective	4

Total 27-30*

* The total may vary depending on the transfer of community college equivalent courses which carry, in some cases, fewer credits. A minimum of 18 credits must be upper-division. Only grades of C or above may be counted toward these requirements. Students must take all coursework for differentiated grades. At least 16 credits must be in residence at PSU. A minimum cumulative GPA of 2.5 in coursework is required. Students must also complete the required content courses for the subject they plan to teach to apply to GTEP.

Minor In Special Education

The Minor in Special Education is intended for students who plan to enter a graduate teacher education program and be licensed to teach Special Education. While the minor is not a requirement for admission to the PSU Graduate School of Education, Special Education Program (SPED), it does include all the prerequisites and highly recommended courses for admission to the program. Students seeking a license for teaching special education must complete a graduate-level program. The Graduate School of Education recommends students for teacher licensure at the completion of the Special Education Program.

Core Courses	Credits
Math 211, 212, or 213 Foundations of Elementary Mathematics	8
SpEd 410 Historical and Contemporary Issues in Disability Studies	3
SpEd 417 Careers in Special Education	4
ED 420 Intro to Education and Society	4
CI 432 Computer Applications in the Classroom ..	3
Psy 311U Human Development	4
SpEd 418 Survey of the Exceptional Learner	3
SpEd 460/UNST 421 Outdoor Education/ Recreation With Persons with Disabilities	6

Elective (choose one class):	2-4
CFS 491 Conceptual Foundations in Child and Family Studies	
G 355 Geosciences for Elementary Educators	
Psy 460 Child Psychology	
Psy 461U Psych. Of Adolescence and Early Maturity	
Psy 340 Principles of Behavior Analysis	
Sci 311U Teaching Everyday Science	
SpEd 455 Working with LEP Children w/ Special Needs	
SpHr 365 Survey of Speech, Language, and Hearing Disorders	
SpHr 372 Speech and Language Development in Children	

Total 37-39*

*The total may vary depending on the transfer of community college equivalent courses which carry, in some cases, fewer credits. A minimum of 18 credits must be upper-division. Only grades of C- or above may be counted toward these requirements. Students must take all coursework for differentiated grades. At least 16 credits must be in residence at PSU. A minimum cumulative GPA of 2.5 in coursework is required.

For more information about any of the education minors, contact Karen DeVoll, CLAS Advising Center, SMSU M305, devollk@pdx.edu

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 pre-law 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 interests, 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 graduate 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.

Psychology

317 Cramer Hall
503-725-3923
www.pdx.edu/psy/

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.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Psychology's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 for more information.

Degree requirements

Requirements for major. The major in psychology requires a minimum of 60 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.

All psychology majors are strongly encour-

aged to participate in the advising process, which includes a Group Orientation session, peer mentoring, and faculty advising. Information about the psychology advising program is available on the Psychology Department website.

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
Stat 243, 244.....	8
Psy 200, 204.....	8
Psychology elective 200-level or above (including Psy 399-409).....	4
Psy 321.....	4
Psy 410-498.....	16
Additional upper division psychology courses: (300 or 400 level, excluding 401-409).....	20
Total	60

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 diversity.

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 experimental psychology (Psy 454). 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.

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 or 400-level psychology courses (excluding 401 to 409).....	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 undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling department minor requirements.

SECONDARY EDUCATION PROGRAM

Adviser: E. Skinner

(See *Interdisciplinary Studies: Social Science*, page 274.)

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. and the Systems Science Ph.D. programs. For information relating to the Ph.D. program in urban studies, see page 376. For information relating to the Ph.D. program in systems science, see page 198.

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 December 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, including thesis, in approved graduate courses, forty of which must be earned in psychology. 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 follows:

	Credits
Psy 521, 522	10
Psy 514, 515, 516	12
Electives	26
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 in research design, methodology, ethics, and internship.

The required coursework for the Ph.D. program, including the equivalent to the two-year master's program, is as follows:

	Credits
Psy 621, 622, 624, 6xx (a required methodology elective).....	18
Psy 614, 615, 616.....	12
Psy 618.....	4
Internship.....	8
Electives	31
Thesis.....	8
Dissertation.....	27
Total	108

Comprehensive examination. The comprehensive exam is comprised of exams in the major area and the minor area.

Dissertation. The student must submit and defend the dissertation at an oral exami-

nation.

The details of all requirements are outlined in the Graduate Student Handbook which can be found on the graduate page of the department website at www.pdx.edu/psy.

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 300U

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 310U

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 311U

Human Development (4)

Development of the individual across the life-span, 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

Social Psychology: Self, Attitudes and Social Influence (4)

Examination of psychological and sociological processes associated with people's thoughts about and interactions with one another. Particular emphases on self, social identity, social cognition, attitudes, prejudice and persuasion. Expected preparation: Soc 200, or Psy 200 or 204. Credit will not be given for both Soc 342 and Psy 342.

Psy 343

Social Psychology: Social Relationships and Groups (4)

Examination of sociological and psychological processes associated with interpersonal, group, and inter-group behavior. Particular emphases on aggression, pro-social behavior, interpersonal attraction, group influence, conflict and cooperation. Expected preparation: Soc 200, or Psy 200 or 204. Credit will not be given for 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 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 431U

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 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 451/551

Introduction to Neurophysiological Psychology (4)

The study of the nervous system, various anatomical, neurophysiological, and imaging techniques for studying the brain and behavior, including specific cognitive abilities such as sensation, perception, attention, language, and emotion. Prerequisites: Junior standing.

Psy 454

Experimental Psychology (5)

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**

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 behavior therapy. The course is intended for advanced students in psychology, social work, special education, speech pathology, and nursing. Prerequisites: Psy 340. Expected preparation: Psy 346.

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. Prerequisites: Psy 484. Expected preparation: Psy 346.

***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 491

Decision Making I: Values & Choice (4)

Normative models, descriptive models, and cognitive aids for structuring decision problems, evaluating consequences of alternative courses of action, and choosing among alternatives. Prerequisites: Stat 243 and 244, Psy 321 and 348; or permission of instructor.

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

Psychological Measurement(4)

Covers the development, validation, and applications of psychological tests. Students will learn about various types of psychological tests, the issues of reliability, validity, item analysis, and standardization of tests, and ethics in choosing and applying tests. There will be both lecture and lab portions required. Prerequisites: Stat 243 and 244, and Psy 321.

***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 Organizational Psychology (4)

Theory, methods, and selected topics in organizational psychology including leadership, motivation, job attitudes, job stress, organizational climate, and employee retention.

***Psy 517/617**

Advanced Industrial Psychology (4)

Theory, methods, and selected topics in industrial psychology including job analysis, performance appraisal, personnel selection, legal issues, and training. Expected preparation: admission to Psychology graduate program.

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 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 532*Clinical Interviewing (4)**

Introduction to principles and techniques of interviewing. Focus on clinical applications in organizational settings.

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 550/650**Occupational Health Psychology (4)**

Application of professional psychological principles of practice, theory, and research to work settings. Focus on science and practice drawn from psychology and other disciplines in the promotion and development of workplace health- and safety-related initiatives. Occupational Health Psychology researchers and practitioners draw from the domains of public health, preventive medicine, nursing, industrial engineering, law, epidemiology, and psychology to develop sound theory and practice for protecting and promoting the safety, health, and well being of individuals in occupational settings.

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 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 566/666**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 569/669**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 586/686*Social Program Evaluation (4)**

Foundational concepts in social program evaluation theory and practice including theoretical perspectives on the nature and purpose of program evaluation, phases of program evaluation, ethics and standards of practice, socio-political considerations, and proposal and report writing. Recommended prerequisites: Psy 521/621, Psy 522/622, Psy 524/624.

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 595/695**Psychological Measurement (4)**

Covers theories, methods, and implications in the development and validation of measures of psychological constructs. Students will learn about the issues of reliability, validity, item analysis, standardization, and applications of measures via both lectures and hands-on experiences in the lab. Expected preparation: Psy 521/621 or equivalent statistics/method courses.

Psy 601**Research (Credit to be arranged.)**

Consent of instructor.

Psy 603**Dissertation (Credit to be arranged.)****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

101 Stephen Epler Hall
503-725-4243
<http://www.pdx.edu/cse/>

M.S.T. (General Science)

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 administers a Master of Science in Teaching (MST) program, and professional development opportunities for existing science educators. The Center also supports community partnerships which 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 expand 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. It is the administrative home of the Intel Northwest Science Exposition, the Robert Noyce Scholarship Program for pre-service math and science teachers, and an Oregon Department of Education Math and Science Partnership program called the Oregon Teacher Scholars Program. The CSE also works in partnership with the Louis Stokes Alliance for Minority Participation (LSAMP), a program working to enhance the undergraduate experience for underrepresented students in Science, Technology, Engineering, and Mathematics (STEM). In addition, many CSE faculty members partner with local schools, non-profits, and government agencies as part of the organization's professional development program.

Graduate program

The College of Liberal Arts and Sciences offers the Master's of Science in Teaching in General Science degree (MST). The goal of the Master's of Science Teaching (MST) in General Science is to advance the use and understanding of teaching science inquiry through graduate level coursework, and an

active research program. The MST is administered within flexible guidelines to match the needs of students with varying backgrounds and professional experience. Graduate students work with faculty advisors to develop and carry out a science learning- and teaching-based research agenda.

The CSE offers two Masters of Science in Teaching programs:

The University requires that students complete 24 credits in graduate level science and nine to fifteen credits in education. For a more specific description of the course plan for the option I and option II MST in General Science please refer the Center for Science Education webpage at <http://www.pdx.edu/cse/mst>.

Option one is an MST program designed for those who are preparing to teach informal science, or in higher education, or already hold a teaching certificate. This program is suited to those who are current and future science educators desiring to enhance science teaching, and student learning assessment knowledge for Kindergarten through higher education settings, or individuals interested in science interpretation for the general public.

Option two is the MST portion of the Robert Noyce Teacher Scholars Program. Students without Noyce funding, but who are enrolled in the Graduate Teacher Education Program may also use this plan to earn an MST. The goal of the program is to prepare students for teaching in diverse classrooms in high needs schools. This two year program is designed specifically for pre-service K-12 science teachers. The first year of this program includes the part-time Graduate Teacher Education Program, and the MST graduate level science content courses and classes which will support scholarship in the area of science education research. The second year of the Noyce program is primarily focused on continuing the part-time Graduate Teacher Education Program (GTEP), where students complete the requirements to earn a recommendation for an Oregon Teaching Certificate, and complete the master's science education research project, or thesis. The Noyce program includes a scholarship stipend that supports approximately 80% of the cost of

the two year program.

In both Option I and Option II programs, students complete a thesis contingent on advisers' approval. In order to fulfill degree requirements, the student must satisfactorily complete the degree programs, and pass their thesis defense.

Courses

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
(Credit to be arranged.)

Science in the Liberal Arts

218 Science Building II
725-4982
www.pdx.edu/esm/

Undergraduate Program

Science in the Liberal Arts is a set of undergraduate level course offering. These courses emphasize general scientific inquiry, focusing on the ongoing process of active discovery, and the analysis of science-related political, economic, social, and ethical topics. By providing an in-depth tutorial in the building blocks of scientific inquiry—the formation of thought, the process of problem-solving, and the active engagement of debate—Science in the Liberal Arts provides teachers and students with the tools necessary to work in more specialized fields of science.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Science in the Liberal Arts's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

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 laboratory-based science

course requirements for the PSU Bachelor of Science degree. These courses will simultaneously meet Science in the Liberal Arts 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 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 components, discussion, and

Internet exercises. Includes laboratory and/or fieldwork. Recommended prerequisite: Natural Science Inquiry.

Sci 343

Columbia Basin Plant Communities (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 354

Science and Politics of Columbia River Decisions (4)

Exploration of case studies of relationships between science and politics in making decisions about controversial Columbia River management issues. Students will identify a particular issue and its related stakeholders, define objectives, collect as well as analyze scientific data and political positions, and participate in role-playing decisions as stakeholder groups and as management committees. Prerequisite: Natural Science Inquiry.

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 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 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.)

217 Cramer Hall
503-725-3926
www.pdx.edu/sociology/

B.A., B.S.

Minor

Secondary Education Program—
 Social Science

M.A., M.S.

Ph.D.

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 students for graduate programs leading to careers in research, public service, and higher education. Sociological knowledge helps create informed and thoughtful citizens.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Sociology's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Sociology

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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 301 Foundations of Sociology I.....	4
Soc 302 Foundations of Sociology II.....	4
Soc 310 U.S. Society	4
Soc 320 Globalization	4
Soc 397 Social Research Methods	5
Soc 398 Sociology Research Project.....	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 301 and Soc 302 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:

	Credits
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

(See Interdisciplinary Studies: Social Science page 274)

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 also offers a Ph.D. in Sociology and Social Inequality. In addition, the department participates in the Urban Studies Ph.D. program. For information relative to that program, see page 376.

Admissions requirements

Students must be admitted to the master's and Ph.D. programs 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 or Ph.D. degree program must have the following materials sent to the department:

- Sociology Department Application Form.
- 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). GRE scores not required for Ph.D. applicants.
- A letter of application describing his or her sociological interests.
- A writing sample.

Applicants for the master's degree 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.

Students applying for the PhD program must have completed a master's degree (e.g., MA/MS/MPA/MPH/MSW) prior to starting the program. If the master's degree is not in sociology, additional sociology coursework may be required (see degree requirements section).

Degree requirements

University master's degree requirements are listed on page 65. 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.

Core	Credits
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

† Elective courses outside sociology must be approved by the student's adviser

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 (Interdisciplinary Studies; Social Science), see page 274.

Doctor of Philosophy. Candidates for the Ph.D. in Sociology and Social Inequality must earn a minimum of 51 hours in graduate coursework including 8 credits in core sociology courses, 16 elective credits (8 may be in other departments), and 27 dissertation credits.

Core	Credits
SOC 684 Social Inequality	4
SOC 695 Advanced Research Methods	4
Electives	
600 level (at least 8 credits in sociology)	16
Dissertation.....	
(includes proposal, research project and comprehensive exam).....	27

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 301

Foundations of Sociology I (4)

Examination and comparison of modes of sociological thinking, from the emergence of a distinctive sociological perspective through sociological theory of the mid-twentieth century. Recommended prerequisite: Soc 200.

Soc 302

Foundations of Sociology II (4)

Developments in American sociological theory from mid-twentieth century to today. Considers impact of social change and social movements on theory, including neo-Marxism, feminism, post-modernism and current new directions. Prerequisite: Soc 301 or 470.

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 prerequisites: Soc 200, 301, 302.

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 that people attempt to deal with the instabilities accompanying globalization. Recommended prerequisites: Soc 200, 301, 302.

Soc 330

Sociology of Food Inequalities (4)

Examination of food and nutrition issues and problems through the lens of the social sciences, with an emphasis on inequalities in the production, distribution and consumption of food. Economic, social, political and symbolic dimensions of food systems and food behaviors. Social determinants of hunger, malnutrition, and obesity. Exploration of solutions at the local, societal and global level.

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 subordi-

nate-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 342

Social Psychology: Self, Attitudes and Social Influence (4)

Examination of psychological and sociological processes associated with people's thoughts about and interactions with one another. Particular emphases on self, social identity, social cognition, attitudes, prejudice and persuasion. Expected preparation: Soc 200, or Psy 200 or 204. Credit will not be given for both Soc 342 and Psy 342.

Soc 343

Social Psychology: Social Relationships and Groups (4)

Examination of sociological and psychological processes associated with interpersonal, group, and inter-group behavior. Particular emphases on aggression, pro-social behavior, interpersonal attraction, group influence, conflict and cooperation. Expected preparation: Soc 200, or Psy 200 or 204. Credit will not be given 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 348

White Identities in the United States (4)

The social construction of whiteness within various social contexts. Forms of white political consciousness, both progressive and regressive; white supremacy and white privilege across the political spectrum. Challenges related to the construction of anti-racist white identities; white involvement in anti-racist social movements.

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). Prerequisites: Stat 243. Expected preparation: Soc 200, 301, 302.

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 401/501/601****Research (Credit to be arranged.)**

Consent of instructor.

Soc 404/504/604**Cooperative Education/Internship (Credit to be arranged.)****Soc 405/505/605****Reading and Conference (Credit to be arranged.)**

Consent of instructor.

Soc 407/507/607**Seminar (Credit to be arranged.)**

Consent of instructor.

Soc 410/510/610**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 419/519**Sociology of Mental Illness (4)**

An overview of sociological perspectives on mental health and illness. Informs understanding of mental health and illness by challenging dominant views of mental illness, examining how social relationships play a role in mental illness, questioning the goals and implications of mental health policy and presenting research on how mental health services are organized and provided. Prerequisite: 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, ethnicity, 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 Gender (4)**

Consideration of the theoretical, methodological, and empirical contributions of current sociological scholarship on gender. Emphasis on the intersection of gender, sexuality, race/ethnicity, and class. Analysis of topics such as: masculinity/femininity, parenting, family, education, work, sexualities, reproduction, politics, and social change. This is the same course as WS 425/525 and may be taken only once for credit. Prerequisites: junior standing.

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 427/527**Gender and Work (4)**

Consideration of the theoretical, methodological, and empirical contributions of current scholarship in the area of gender and work. Emphasis on the intersection of gender, sexuality, race/ethnicity, and class. Topics include: inequalities in the labor force, low wage work and poverty, work/family conflict, sex/sexuality in the workplace, and masculinity/femininity at work. Prerequisites: junior standing.

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 446**Immigrants in America (4)**

This course is devoted to understanding controversial issues around immigration to the U.S. We will read and discuss social science research on demographics of immigrants, immigration policy, immigrant incorporation, and the impact of immigration on the receiving society. Prerequisites: Soc 200 or Soc 337.

Soc 448/548**Sociology of Education (4)**

Development of a sociological understanding of education in the United States. Examination of the role of schooling in regards to the larger society, the social structure of schools, processes of social mobility, stratification and social reproduction; the dynamics of race, class, and gender inequalities in education, student teacher relationship; school choice; and the outcomes of education. Prerequisites: Soc 300. Expected preparation: Soc 200.

Soc 450/550**Sociology of Higher Education (4)**

Social factors affecting individuals within higher education. Particular attention to inequalities within higher education and the role higher education plays in promoting social mobility as well as social reproduction. Includes models of higher education, the application of sociological theories to issues in higher education, access to college, Affirmative Action, standardized testing, and class, race, and gender-based differences in individual educational outcomes and retention. Prerequisites: sophomore standing or higher. Expected preparation: Soc 200.

Soc 452/552**Education and Equality: Comparing the US, Asia, Europe (4)**

Despite the promise of equal opportunity, US public schools produce vast inequalities in educational outcomes compared to other nations. Why? The course examines the impacts of tracking, testing, teaching styles, race, class, and gender in the US through comparisons of Japan, Singapore, Germany, and Finland. Prerequisites: Soc 200, Soc 310, or Soc 320.

Soc 454/554**Sociology through Film (4)**

Filmmakers, like sociological fieldworkers, use stories to trace the action of their subjects or characters and scenes to reconstruct their shared social worlds. Through sociological studies and documentary and narrative films, the course examines portrayals of social institutions and processes which may include education, ethnic relations,

artistic production, and other fields. Prerequisites: Soc 200, Soc 310, or Soc 320.

***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

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 subcultural 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 462/562

Sociology of Integrative Medicine (4)

An examination of common systems and practices understood as complementary and alternative medicine (CAM) including prevalence, patterns of use, trends, consumer health beliefs and motivations, and integration with mainstream allopathic medicine; philosophical, historical and political dimensions; theories of health and illness; evidence-based research vs. traditional and folk beliefs; and a consideration of benefits and limitations considering the growing popularity. Not a course about how to practice any form of alternative medicine. Recommended: Soc 200.

Soc 463

Global Inequalities and Health (4)

An examination of international health inequalities from social, political and economic perspectives. The impact of globalization, transnationalism and migration on population health. Inequalities within and between countries and regions, and the social dynamics that shape those inequalities. Infectious pandemics and chronic diseases, and global efforts to control diseases and improve health. Recommended prerequisites: Soc 200.

Soc 465

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 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 397, 398 or equivalent.

Soc 498/598

Globalization Seminar (4)

Analysis of the ways in which economic patterns that reach across national boundaries affect the security of communities and their standards of living. Topics include how different economic classes fare in the rapid reshuffling of national economies that globalization entails; the role of international institutions in shaping economic globalization; the experience and responses of workers as a group; and the role of states in facilitating or resisting the adverse impacts of globalization. Prerequisite: Soc 320.

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 565/665

Environmental Sociology (4)

Analysis of the types of social forces which frame the nature of environmental problems concerning resource use and distribution across spatial and

geopolitical levels. Examines the social forces which influence which problems are tackled; the mechanisms selected to solve the problems; and the social impact of the selected solutions.

***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 301, 302 and graduate status.

Soc 584/684

Social Inequality (4)

Theoretical perspectives and current research in social inequality including dimensions such as social class, race/ethnicity, gender, age, and nativity. Exploration of social inequality in selected domains, such as health services and outcomes, employment and work, educational attainment, housing, and other areas of sociological inquiry.

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.

Soc 587/687

International Health Inequalities (4)

Explores the sociology of health and inequality in an international context. Topics include international health institutions, healthcare systems, and the social determinants of health inequalities in a global perspective.

Soc 588/688

Social Sustainability Theory and Practice (4)

Healthy families; healthy communities; healthy democracies; economic, gender and racial equity; and social justice are all factors of social sustainability. This course will examine how to measure and how to reach these goals, by examining models locally, nationally and internationally. We will look at best practices of city, state and national governments, businesses, unions, and NGOs. We will also examine the relationship between economic, environmental and social sustainability.

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 397, 398, 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 603

Dissertation (Credit to be arranged.)

Pass/no pass option.

Soc 694

Analysis of the Impacts of Social and Management Practices on Ecosystem Services (4)

Examination of social forces and institutions that influence use and guide policy for management of ecosystem services. Investigation of inter-jurisdictional governance of natural systems to establish law and policy that promote investment in ecosystems to create sustainable cities. This course is the same as PAP 694; may only be taken once for credit.

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.pdx.edu/sphr/

B.A., B.S.

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 medical and educational settings, community clinics, 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). Students completing the master's degree in speech-language pathology have the option of completing requirements for the Oregon Educational 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 primarily prepares students for graduate work in speech-language pathology

and audiology. It includes courses in normative, developmental, and disordered areas of speech, hearing, and language. 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.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Speech and Hearing Sciences' undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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 394 Guided Observation (1)
- SpHr 461/561 Neurology of Speech and Hearing (4)

SpHr 464/564 Speech Disorders in Children (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)

Requirements also include 8 credits of American Sign Language

Graduate program

The department offers a program leading to the Master of Arts or Master of Science degrees with specialization in speech-language pathology. The Council for Accreditation of Academic Programs (CAA) of the American Speech-Language-Hearing Association accredits the SPHR graduate program. Graduates of the program meet the requirements for clinical certification of the CAA 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, language, communication, and swallowing disorders as well as the prevention, assessment, and treatment of those disorders. A second major component of the program consists of supervised clinical practica in which students work directly with individuals who have communication and swallowing disorders. This type of activity enables students to apply knowledge gained in the classroom and acquire requisite professional skills with clients across the lifes-

pan. Students obtain practical experience through clinics on campus and in a broad range of off-campus community placements, including medical and educational settings and community clinics.

Admission requirements

In addition to the University requirements for admission to graduate programs (page 58), 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. The following courses (or their equivalents) are required prerequisites:

- SpHr 370 Phonetics and Acoustics
- SpHr 371 Anatomy and Physiology of Speech and Hearing
- SpHr 372 Speech and Language Development in Children
- SpHr 380 Language Disorders in Children
- SpHr 461 Neurology of Speech and Hearing
- SpHr 464 Speech Disorders in Children
- SpHr 487 Basic Audiology
- SpHr 488 Advanced Audiology
- SpHr 489 Aural Rehabilitation
- SpHr 495 Organic Communication Disorders
- SpHr 496 Introduction to Clinical Management Stat 243 & 244 Introduction to Probability and Statistics I & II, OR Stat 543 Survey of Statistical Methods, OR SpHr 410/510 Statistics for Communication Disorders

These prerequisites 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 complete pre-requisite courses by enrolling in the Department as a post-baccalaureate student.

All students applying for admission to the master's degree program should also have successfully completed one or more courses in each of the following areas: math, biological sciences, physical sciences, and social/behavioral sciences (see www.asha.org 2014 Certification Standards, Standard IV-A).

Students may apply for admission to the master's degree program while in the process of completing their Bachelor's degree or post-baccalaureate coursework. Completion of the pre-requisite 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 both the Department and the PSU Admissions Office as outlined on page 65. All applicants should review the required essential functions to practice as a speech-language pathologist (see www.pdx.edu/sphr/essential-functions). Specific requirements of the Department include:

1. Three letters of reference completed by individuals closely acquainted with the applicant's academic or employment background. We recommend at least two letters address academic abilities and potential to succeed in the graduate pro-

gram.

2. Official transcripts from all colleges and universities attended.
3. Official scores of the Graduate Record Examination (GRE).
4. A written narrative (Personal Statement) outlining the candidate's academic background and professional goals. Detailed information regarding the application process can be obtained from the Web site: www.pdx.edu/sphr.

Departmental conditional status. All students are admitted to the program with conditional status. To be granted regular status and to be retained in the graduate program, students must complete 12 letter-graded graduate credit hours of coursework in speech and hearing sciences with a minimum GPA of 3.00 and attain at least a B- in each of two clinical practicum experiences with no academic, clinical, or professionalism remediation plans in place.

Cohorts. The Department will admit graduate students in two cohorts each year; one cohort will begin in Summer, the other in Fall.

Degree requirements

University master's degree requirements are listed on page 65. Specific departmental requirements are as follows:

1. Students must demonstrate the knowledge and skills required for the Certificate of Clinical Competence from the Council for Clinical Certification (CFCC) of the American Speech-Language-Hearing Association.
2. Students must complete a minimum of 75 graduate credits: 48 credits of core coursework, 6 credits of elective coursework, 18 credits of practicum, and 3 credits of a culminating experience.
3. Coursework. Students must complete fourteen required core courses and three elective courses. A grade of B- or above must be obtained for each course.

CORE Courses (48 credits):

- SPHR 530 Clinical Management in Communication Disorders (4)
- SpHr 540 Multicultural Topics in Communication Disorders (4)
- SpHr 545 Pathways to Professional Practice (2)
- SpHr 554 Advanced Speech Sound Disorders: Theories and Application (4)
- SpHr 558 Symbol Systems in Early Communication (2) OR SpHr 559 Augmentative and Alternative Communication (2)
- SpHr 560 Research Methods Communication Sciences and Disorders (4)
- SpHr 562 Cognitive Rehabilitation (4)
- SpHr 563 Adult Language Disorders (4)
- SpHr 565 Dysphagia (4)
- SpHr 566 Motor Speech Disorders (4)
- SpHr 581 Stuttering (2)
- SpHr 582 Voice Disorders (2)
- SpHr 584 Assessment and Treatment of Language Disorders: Birth to Age Five (4)
- SpHr 585 Assessment and Treatment of Language Disorders in School-Aged Children and

Adolescents (4)

ELECTIVE Courses (choose three; 6 credits):

- SpHr 541 Bilingual Topics in Communication Disorders (2)
- SpHr 546 Professional Ethics (2)
- SpHr 553 Counseling in Communication Disorders (2)
- SpHr 564 Advanced Medical Speech-Language Pathology (2)
- SpHr 567 Cleft and Craniofacial Disorders (2)
- SpHr 586 Autism (2)

4. Clinical Practicum. Students must complete a minimum of 400 clock hours of supervised clinical experience in the practice of speech-language pathology to be eligible for professional certification. These include 25 hours of observation. In order to receive credit for clinical hours completed in a clinical practicum experience, the student must obtain a grade of B- or above in the course. Students will have the opportunity to satisfy this requirement by completing 18 required credits of SpHr 509 Practicum, which shall include PSU clinic experiences and two externships.
5. Culminating Experience. Students must complete one of the culminating experiences listed below. The default option in Speech and Hearing Sciences is the comprehensive exam. The decision as to which of these options to pursue is to be made in conjunction with the student's academic advisor.
 - a. Comprehensive Examination—The student must pass written comprehensive examinations. These are normally taken in the term preceding graduation, in the student's second year of graduate study. Specific details of the administration and scoring of the exams will follow current departmental guidelines. Students will register for 3 credits of SpHr 501 Research: Comprehensive Examination during the term in which they write the examination. This is the only graduate course offered on a Pass/No Pass basis.
 - b. Master's Project—The student will complete a scholarly project related to his or her academic discipline at the invitation of a faculty member. 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 in the department of Speech and Hearing Sciences. Students pursuing this option are required to register for 3 credits of SpHr 506 Special Project with their project director. A letter grade of B- or above is required.
 - c. Master's Thesis—Students opting to complete a thesis at the invitation of a faculty member will follow the University guidelines for theses outlined on page 67. In addition to the written thesis, the student

must pass a final oral examination before a committee consisting of at least three faculty members from the department of Speech and Hearing Sciences. Students pursuing this option are required to register for a minimum of 6 to 9 credits of SpHr 503 Thesis. A letter grade of B- or above is required.

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 509 (18 credits), SpHr 530, SpHr 540, SpHr 545, SpHr 554, SpHr 559, SpHr 560, SpHr 562, SpHr 563, SpHr 565, SpHr 566, SpHr 581, SpHr 582, SpHr 584, SpHr 585, and 6 credits of graduate-level electives.

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 acoustic bases of speech and hearing will also be addressed.

SpHr 371
Anatomy and Physiology of Speech and Swallowing (4)

A study of the anatomy and physiology of the respiratory, phonatory, and articulatory systems for speech, with applications to speech disorders.

The physiology of swallowing and swallowing disorders is also covered.

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 Children (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 394
Guided Observation (1)

Designed to acquaint students with the clinical process in speech, language, and audiology cases. Students will observe phases of clinical operation including diagnostic management, parent conferencing, and material preparation.

SpHr 395
Directed Clinical Assistantship (2)

Designed to acquaint pre-professional 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 399
Special Studies (Credit to be arranged.)

SpHr 401/501
Research (Credit to be arranged.)
Consent of instructor. Use 501 to register for comprehensive exams.

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
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 475
Introduction to the Professions of Speech-Language Pathology and Audiology (4)

Overview of topics related to professional development in speech-language pathology and audiology, including professional behavior, ethical responsibility, scope of practice, interdisciplinary collaboration, professional affiliations, continuum of care, typical work settings, and applying to graduate schools.

SpHr 480
Introduction to Sociocultural Aspects of Interactions (4)

Introduction to communication and interaction on context and influence of context on communication disorders. Explores situational, social-interpersonal, and cultural variables. Examines systems theory and cultural practices as they influence communication. Prerequisites: must be junior, undergraduate, or post-baccalaureate status.

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 495
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 496
Introduction to Clinical Management (4)

Provides an introduction to assessment and management of diverse persons with communication disorders across the lifespan. Covers basic principles of assessment and intervention, evidence-based practices, and behavior management. Introduces terminology and basic techniques for addressing speech, language, and hearing disor-

ders, with special consideration of program design and delivery. Prerequisites: SpHr 371, 372. Expected Preparation: SpHr 370.

SpHr 503

Thesis (Credit to be arranged.)

Consent of instructor. Must register for minimum of 6 credits total, with at least 1 credit in term of defense.

SpHr 509

Practicum (Credit to be arranged.)

Restricted to SpHr graduate students only. Students must show proof of professional liability insurance.

SpHr 530

Clinical Management in Communication Disorders (4)

Focuses on principles of static and dynamic assessment, intervention planning and implementation, goal writing and data collection, and behavior management—including motivation and reinforcement—across diagnostic populations and developmental stages. Considers contextual influences and emphasizes evidence-based practices. Restricted to graduate students. Prerequisites: SpHr 370 and SpHr 380.

SpHr 540

Multicultural Topics in Communication Disorders (4)

Introduces topics of communication disorders within the framework of culture and identity. Explores cultural attitudes and beliefs about communication and disabilities, cultural differences, cultural identity, second and bilingual language acquisition, and introduces assessment and intervention strategies for non-mainstream populations. Prerequisites: SpHr 530.

SpHr 541

Bilingual Topics in Communication Disorders (2)

Explores current topics within bilingual speech and language development and disorders. Covers typical and atypical development within many areas of speech and language, diagnostic criteria for determining disability, and assessment and intervention topics for children and adults from bilingual language backgrounds. Emphasis on Spanish-English bilingual populations.

SpHr 545

Pathways to Professional Practice (2)

Overview of topics related to professional practice of speech-language pathology: professional organization membership, certification, licensure, and ethical and legal responsibilities. Career development issues: preparing for national exams; résumé writing, interviewing, and planning for the Clinical Fellowship; team collaboration; supervision; and reimbursement practices. Prerequisites: SpHr 530.

SpHr 546

Professional Ethics (2)

Enhances student awareness of and knowledge about ethical principles that form the basis for the American Speech-Language-Hearing Association Code of Ethics. Explores complexity of professional practice of SLP that have ethical considerations. Includes weekly group discussion to engage in ethical diagnosis using clinical scenarios based on individuals with communication disorders. Prerequisites: SpHr 530.

SpHr 553

Counseling in Communication Disorders (2)

Presents approaches to counseling with emphasis on and implications for developing effective

working relationships with clients with communication disorders and their families. Presents techniques for effective therapeutic interventions. Students will explore and apply current interviewing and counseling strategies used for assessment, treatment, and intervention in the practice of speech-language pathology. Prerequisites: SpHr 530.

SpHr 554

Advanced Speech Sound Disorders: Theories and Application (4)

Development and disorders of speech sound production, with particular emphasis on children. Phonological and phonetic theories used in understanding speech and speech sound development and disorders. Various means of assessing and providing intervention for speech sound disorders, including childhood apraxia of speech. Prerequisites: SpHr 370 and SpHr 372 or equivalent. Restricted to graduate students.

SpHr 558

Symbol Systems in Early Communication (2)

Focuses on communication characteristics of individuals with severe communication disorders and their use of augmentative and alternative communication to meet both pre-intentional and intentional and symbolic communication needs. Emphasis on holistic communication assessment methods and intervention strategies to enhance communication in children. Prerequisites: SpHr 530.

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 sensory-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 developmental or acquired disorders in speech and language. Prerequisites: SpHr 530.

SpHr 560

Research Methods in Communication Sciences and Disorders (4)

Introduction to research methods in communication sciences and disorders. Covers research strategies and designs commonly used in communication sciences and disorders, as well as methods used in the collection, analysis and interpretation of data. The course focuses on the application of research principles in the critical evaluation of journal articles and other research literature, with the goal of enabling students to make informed decisions as to which developments in communication disorders should be applied to clinical practice. The principles and processes of evidence-based, clinical practice are emphasized. Prerequisites: Stat 243, 244 or equivalent.

***SpHr 562**

Cognitive Rehabilitation (4)

Discusses causes, symptoms, prevention, assessment, and management of cognitive-communication disorders following acquired brain injury across the lifespan. Specific populations to be discussed include traumatic brain injury, stroke, and the dementias. Places emphasis on evidence-based clinical reasoning and applying the World Health Organization model to clinical management in rehabilitation settings. Restricted to graduate students.

SpHr 563

Adult Language Disorders (4)

Presents theories of acquired language disorders in adults specific to aphasia rehabilitation, including causes, symptoms, prevention, assessment, and management of aphasia in adults. Emphasis is placed on evidence-based clinical reasoning and applying the World Health Organization model to clinical management in a variety of rehabilitation settings. Prerequisites: SpHr 461. Restricted to graduate students.

SpHr 564

Advanced Medical Speech-Language Pathology (2)

Addresses current topics related to practice of medical speech-language pathology in a variety of settings. Topics may include management of tracheostomy/ventilator dependence; medical terminology; medical billing, reporting, and appeals; interdisciplinary models; evidence-based practices; common medications and their side effects; and other topics of contemporary interest to learners. Prerequisites: SpHr 461, SpHr 562, SpHr 563, and SpHr 565.

SpHr 565

Dysphagia (4)

Advanced study of normal and disordered anatomy and physiology of swallow mechanism, including causes, symptoms, prevention, assessment, and management of swallowing disorders across the lifespan. Emphasis on evidence-based clinical reasoning and applying the World Health Organization model to clinical management in a variety of practical settings. Prerequisites: SpHr 530.

SpHr 566

Motor Speech Disorders (4)

Discusses disorders of speech sensorimotor production, including causes, symptoms, prevention, assessment, and management of acquired apraxia of speech and the dysarthrias across the lifespan. Emphasis placed on evidence-based clinical reasoning and applying the World Health Organization model to clinical management in varied settings. Prerequisites: SpHr 530.

***SpHr 567**

Cleft and Craniofacial Disorders (2)

Provides in-depth clinical management of children with cleft lip and palate and other craniofacial syndromes. Particular emphasis placed on identification, description, assessment, and treatment of speech production, feeding, and psychosocial development. Explores evidence-based models of team care, including the role of other medical professionals. Prerequisites: SpHr 370, SpHr 371, SpHr 530, and SpHr 554.

SpHr 581

Stuttering (2)

Covers disorders of fluency, including causes, symptoms, prevention, theories of stuttering, assessment, and management of stuttering in pediatrics and adults. Emphasis is placed on evidence-based clinical reasoning and applying the World Health Organization model to clinical management in a variety of practical settings. Prerequisites: SpHr 530.

SpHr 582

Voice Disorders (2)

Presents advanced information about the anatomy and physiology of normal and disordered voice production, including causes, symptoms, prevention, assessment, and management of voice disorders.

ders across the lifespan for organic and functional voice disorders. Prerequisites: SpHr 530.

SpHr 584

Assessment and Treatment of Language Disorders: Birth to Age Five (4)

Focuses on causation, evaluation, and management for addressing communication disorders in infants, toddlers, and preschool children with multiple challenges; particular emphasis on emerging communication across multiple developmental domains, with family-centered, interdisciplinary assessment and intervention. All topics target use of evidence-based practices and the influence of context on performance.

SpHr 585

Assessment and Treatment of Language Disorders in School-aged Children and Adolescents (4)

Includes static, dynamic, and curriculum-based communication assessment of language, learning, and communication disorders. Discusses relation between language and learning disabilities, with focus on treatment of language-based disorders of reading and writing. Intervention emphasizes interdisciplinary service delivery models. Topics target use of evidence-based practices and influence of context on performance. Prerequisites: SpHr 584.

SpHr 586

Autism (2)

Investigates current issues related to diagnosis and intervention for children and adolescents with autism spectrum disorders (ASD). Focuses on current research related to theories of social, communication, motor, sensory, cognitive, and adaptive behavior development. Emphasizes interdisciplinary nature of serving children with ASD. Restricted to graduate students.

Women, Gender, and Sexuality Studies

150 Extended Studies Building

1633 SW Park Ave.

503-725-3516

www.pdx.edu/ws/

B.A., B.S.—Women's Studies
Minor in Women's Studies
Minor in Sexuality, Gender, and
Queer Studies
Postbaccalaureate Certificate in
Women's Studies

The Department of Women, Gender, and Sexuality Studies offers 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, Gender, and Sexuality 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, gender, and sexuality studies is on the cutting edge of educational and intellectual innovation. Courses offered through many different disciplines explore how gender has shaped social, economic, and political institutions, culture, and language. Through these analyses, we envision what the world looks like once women's experience is fully included in our thinking. The Women, Gender, and Sexuality 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, gender, and sexuality 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, gender, and sexuality 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, gender, and sexuality 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.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Women, Gender, and Sexuality Studies' undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 for more information.

Degree requirements

Requirements for major. In addition to meeting the general University degree requirements, the student majoring in Women's Studies must complete a required core program of 36 credits (28 classroom

hours, including a senior seminar, and 8 hours in experiential learning) and 20 credits of WGSS electives (with a minimum of 16 upper-division credits).

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.

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling major requirements with the following exceptions: one Women, Gender, and Sexuality Studies elective course, WS 404 Cooperative Education/Internship, or WS 409 Practicum.

Credits

Core courses

WS 101 Introduction to Women's Studies	4
WS 301 Gender and Critical Inquiry (prerequisite: WS 101)	4
WS 305 Women of Color Feminisms (prerequisite: WS 101)	4
WS 307 Women, Activism, and Social Change....	4
WS 315 Feminist Analysis (prerequisite: WS 301)	4
WS 412/512 Feminist Theory and Methodology (prerequisite: WS 315)	4
WS 415 Senior Seminar (prerequisite: WS 412)	4
Experiential learning	8
WS 409 Practicum (6)	
WS 411 Experiential Learning Seminar (2)	
Electives (minimum 16 upper-division courses) ...	20

Total 56

Requirements for minor in Women's Studies. A minor in Women's Studies will consist of 28 credits. Students will be required to take WS 101 plus 8 credits in the core courses (not including WS 409, WS 411, WS 415). The additional 16 credits may be fulfilled by either core courses (including WS 409, WS 411, WS 415) or Women, Gender, and Sexuality Studies electives including courses cross-listed with other departments or approved by a Women, Gender, and Sexuality Studies adviser.

Core Courses	Credits
WS 101 Introduction to Women's Studies.....	4
Plus eight (8) credits from the WS major core courses (not including WS 409, 411 or 415).....	8
Electives	
Additional credit may be fulfilled by either core courses (including WS 409, WS 411, WS 415) or Women, Gender, and Sexuality Studies electives	16
	Total <u>28</u>

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling minor requirements with the following exceptions: one Women, Gender, and Sexuality Studies elective course or WS 409 Practicum.

Requirements for minor in Sexuality, Gender, and Queer Studies. The minor in Sexuality, Gender, and Queer Studies is an interdisciplinary program which examines sexual desire, sexual practice, gender expression, gender identity, and the sexed body as more than products of biology, but rather as socially organized, even socially produced phenomena located within specific power formations and subject to historical change. This program questions commonplace knowledge, providing new frameworks for the critical study of gender and sexuality. The curriculum includes a broad spectrum of topics related to sexuality and gender, from queer theory and film to the psychology of masculinities, the history of sexualities, and global issues in sexual health.

The minor consists of 32 credits, including four core courses (16 credits) and 16 credits of electives:

	Credits
Core Courses	
Unst 231 Gender & Sexualities.....	4
WS 370U History of Sexualities	4
WS 332U Race/Class/Gender/Sexuality	4
WS 360U Intro to Queer Studies.....	4
Electives	
Anth 103 Intro. to Cultural Anthropology.....	4
Anth 432/532 Gender in Cross-Cultural Prsptive.....	4
BSt 342 Black Feminism/Womanism	4
CFS 490U Sex and the Family.....	4
Comm 410 Sex and the Media.....	4
Comm 452/552 Gender and Race in the Media..	4
Eng 372U Topics in Literature: Gender and Sexuality	4
Eng 494 Feminist Film Theory.....	4
Eng 494/594 Queer Theory.....	4
Eng 447 Harlem Renaissance	4
Eng 441/541 Same-Sex Desire in the English Renaissance	4
PHE 335 Human Sexuality	4
PHE 453/553 Women's Reproductive Health.....	4
PHE 410 Sex Education in America.....	4
PHE 410 Worldview of Sexual Health.....	4
Phl 369U Philosophy of Sex and Love	4
Psy 410 Human Sexualities	4
Psy 431/531 Psychology of Men and Masculinities	4
Soc 339U Marriage and Intimacy.....	4
Soc 344U Gender and Sexualities	4
Span 410 Transgenderism in South American Literature.....	4
Span 436/536 Disease and Literature in the Americas	4
WS 308U Lesbian Literature.....	4

WS 308U Gay and Lesbian Fiction	4
WS 372U Topics in Literature: Gender and Sexuality	4
	Total: <u>32</u>

Other courses may fulfill elective credit requirements with adviser approval.

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling minor requirements with the exception of WS 409 Practicum if approved by a program adviser.

Requirements for post-baccalaureate certificate in Women's Studies.

Core Courses	Credits
WS 301 Gender and Critical Inquiry	4
WS 315 Feminist Analysis (prerequisite: WS 301)	4
WS 412/512 Feminist Theory and Methodology (prerequisite: WS 315)	4
WS 415 Senior Seminar (prerequisite: WS 412)	4
WS 409 Practicum.....	6
WS 411 Experiential Learning Seminar	2
Electives*	
Approved upper-division electives (minimum of 12 upper-division)	16
	Total <u>40</u>

*Please note prerequisites as they apply; see course descriptions.

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).

Courses taken under the undifferentiated grading option (pass/no pass) are not acceptable toward fulfilling Certificate requirements with the following exceptions: one Women, Gender, and Sexuality Studies elective course, or 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. Prerequisites: WS 101 or permission of instructor.

WS 305 Women of Color Feminisms (4)
Examination of the theoretical contributions of women of color to feminist theory, scholarship, and activism in both national and transnational contexts. Prerequisites: WS 101 Introduction to Women's Studies.

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)
Explores 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. Addresses topics such as 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)
Reviews and evaluates assumptions underlying psychological research on women. Surveys the research in areas such as the development of sex differences, acquisition of gender roles, and maintenance of gender stereotypes. Explores 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. Prerequisites: WS 301.

WS 317**Writing as Activism (4)**

Students will work intensively to develop activist writing projects individually and in collaboration with others. Investigate a variety of forms and sources of activist writing, generate new writing in weekly writing workshops, serve as writing partners/coaches with each other, and work cooperatively to complete community-based, writing-involved activist projects.

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)**

Study and practice of the skills involved in competent communication (primarily comprehensive listening and reading, and speaking about 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.

WS 340**Women and Gender in America to 1848 (4)**

This course is the same as Hst 340. See Department of History for course description.

WS 341**Women and Gender in America 1848-1920 (4)**

This course is the same as Hst 341. See Department of History 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 Department of History 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, Gender, and Sexuality 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**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 the same course as ELP 351 and may only be taken once for credit.

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; 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 372**Topics in Literature, Gender, and Sexuality (4)**

Study of representations of gender and sexuality in literature and related cultural forms. May be repeated for credit with different topics. This course is the same as Eng 372.

WS 375**Topics in Sexuality Studies (4)**

Study of different topics related to sexuality. Topics will vary from term to term.

WS 377**Topics in Feminist Spirituality (4)**

Investigation of different forms of feminist spirituality.

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 387**Feminist Organizations: Theory and Practice (4)**

An introduction to the theory and practice of feminist non-profit organizations. Attention to the history of feminist non-profit organizations in the U.S., political and social structures that impact such organizations, and decision-making and management issues related to feminist concepts of power. Partnering with a local feminist non-profit, students will gain hands-on knowledge of how feminist organizations strive to put theory into practice. Prerequisites: WS 307 or junior 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.)****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 (2)**

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 412/512**Feminist Methodologies (4)**

Feminist methodology seeks to assess knowledge-generating strategies in terms of their suitability for feminist research. Analysis of methods and how methods impact outcomes. Development of critical awareness in doing self-directed feminist research. Prerequisites: WS 315.

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. Prerequisites: WS 412.

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 425/525**Sociology of Gender (4)**

Consideration of the theoretical, methodological, and empirical contributions of current sociological scholarship on gender. Emphasis on the intersection of gender, sexuality, race/ethnicity, and class. Analysis of topics such as: masculinity/femininity, parenting, family, education, work, sexualities, reproduction, politics, and social change. This is the same course as Soc 425/525 and may be taken only once for credit. Prerequisites: junior standing.

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 431**Women in the Visual Arts (4)**

This course studies both the representation of women and gender and the art and patronage by women in various media (painting, sculpture, architecture, printmaking, photography, textiles and mixed media). Explores 19th century and 20th century America and Europe. This course is the same as ArH431; 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 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**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.

World Languages and Literatures

491 Neuberger Hall
503-725-3522
www.pdx.edu/wll

B.A.—Concentration in Arabic, Chinese, French, German, Japanese, Russian, or Spanish

Minor—Concentration in Arabic, Chinese, French, German, Italian, Japanese, Persian, Russian, Spanish, or Turkish

Minor in Classical Studies

Certificate in Teaching Japanese as a Foreign Language

Certificate of Advanced Proficiency in Russian

Secondary Education Program

M.A.—World Language: French, German, Japanese, or Spanish

M.A.—World Languages and Literature: primary languages—French, German, Spanish; secondary languages—Chinese, French, German, Japanese, Russian, or Spanish

M.A.T.—French, German, Spanish

The Department of World Languages and Literatures offers undergraduate major programs in Arabic, Chinese, French, German, Japanese, Russian, and Spanish; minor programs in the above languages and in Italian, Persian, Turkish, and Classical Studies; and instruction in the above languages, as well as in American Sign Language, Ancient Greek, Modern Greek, Modern Hebrew, Italian, Korean, Latin, Norwegian, Portuguese, Swahili, Swedish, and Vietnamese. Other languages may be offered from time to time.

Undergraduate programs

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for World Languages and Literatures' undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Students majoring in Arabic, 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 online placement examination. You may access the test under “Advising” at www.pdx.edu/wll.

Students of Arabic, Chinese, Greek, Modern Hebrew, Italian, Japanese, Korean, Latin, Norwegian, Portuguese, Russian, Swahili, Swedish, or Turkish may contact the Department of World 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, Greek, Modern Hebrew, Italian, Japanese, Korean, Latin, Norwegian, Persian, 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 in their native language, nor may they receive credit by exam for their native language.

Degree requirements

Requirements for major in world languages

The Department of World Languages and Literatures offers undergraduate majors in Arabic, Chinese, French, German, Japanese, Russian, and Spanish. An undergraduate world 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 (exclud-

ing 401-410), 8 credits in adviser-approved electives, and 4 credits in linguistics (Ling 390, WLL 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
(in Fr and Span this must include two courses from the 341-342-343 sequence and at least 8 400-level credits)	
400-level courses in the major language	8
(excluding 401-410)	
Adviser-approved electives.....	8
Linguistics	4
(WLL 390, Ling 390, or a linguistics course in the major language)	
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 world language must maintain a minimum GPA of 2.50 on all courses used to satisfy the major requirements.

Requirements for minor in a world language

The Department of World Languages and Literatures offers undergraduate minors in Arabic, Chinese, French, German, Italian, Japanese, Persian, Russian, Spanish, and Turkish. An undergraduate world language minor must complete 20 upper-division credits (numbered 300 or above) in language, literature, or culture, and at least 12 of which are in the target language, and 4 credits in general linguistics (WLL 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 453 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	
Phl 414 Plato	
Phl 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 in all courses used to satisfy the minor requirements.

Certificate of Advanced Proficiency in Russian (CAPR)

This program is designed to permit students majoring in any subject to achieve Superior (professional) proficiency in Russian. Candidates may enroll in the program as undergraduate or as post-baccalaureate students.

Admission requirements

Students who wish to complete the Certificate program must first be admitted to the Russian Flagship Program (RFP).

Sponsored by The Language Flagship, RFP offers both Introductory and Advanced tracks. See www.pdx.edu/russian-flagship/ for details.

Course requirements

Students in the program take five advanced Russian classes, three content classes conducted in Russian, and six Russian across the curriculum classes attached to the students' general education requirements and individual majors. Students complete their Senior Capstone in Russian.

Credits	
Advanced Russian Language Classes (5 classes):	
Rus 325 Russian Phonetics and Phonology	4
Rus 4/511, 4/512, 4/513 Advanced Russian	12
Rus 4/514 Advanced Russian Grammar.....	4
Subtotal	20
Content Classes (3 classes) chosen from:	
Rus 4/521 Topics in Contemporary Russian Culture.....	4
Rus 4/527 Topics in Russian Literature of the 19C.....	4
Rus 4/533 Topics in Russian Literature of the 20C.....	4
Subtotal	12
Russian Across the Curriculum:	
Rus 444, 445, 446 Globalization.....	6
Rus 454 American Studies	2
Rus 455 European Studies	2
Rus 456 Environmental Sustainability	2
Rus 457, 458, 459 Russian in the Major.....	6
Subtotal	18
Unst 421 Capstone: Effecting Change (Russian)....	6
Total	56

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 stu-

dent must complete 16 credits in theoretical and applied linguistics (through the departments of World 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**, E. Nunez.

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 world language taught in Oregon schools and the recommendation of the Department of World 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 129).
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 World 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

The Department of World Languages and Literatures offers degree programs leading to

the M.A. in World Language with a major in French, German, Japanese, or Spanish; the M.A.T. in French, German, or Spanish; and the M.A. in World Languages and Literatures, with a concentration in two world 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. 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 World Language. The M.A. in World 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 World Languages and Literatures. The M.A. in World Languages and Literatures is a graduate degree with concentration in a primary language, a secondary language, and in linguistics. The primary language may be French, German, Japanese, 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 is designed especially for those who wish to strengthen their preparation to teach French, German, or Spanish in secondary schools and two-year colleges, although it is open to anyone wishing to pursue graduate work in these languages.

Admission requirements

Master of Arts in World Languages.

Applicants for admission must meet the University admissions requirements (page 65) 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 World Languages and Literature. Applicants for admission must meet the University admissions requirements (page 65), 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:
 - a. Demonstration of third-year proficiency.

Master of Arts in Teaching. Applicants for admission must meet the University admissions requirements (page 65), 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 World Language. A candidate for the Master of Arts in a World 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	
WLL 560 Principles of Scholarly Research.....	4
551, 552, 553 (any two)	8
WLL 598 (Methods)	4
WLL 503 Thesis	6-9
Additional adviser-approved coursework	20-23
Total	45
Non-thesis option	
WLL 560 Principles of Scholarly Research.....	4
551, 552, 553 (any two)	8
WLL 598 (Methods)	4
501 Research, or other adviser-approved credits.....	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 60.

In addition to the required coursework, the candidate will have to:

- **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 World Languages and Literatures. 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
Advanced Language 511 and 512 or Span 514	8
Twelve graduate credits chosen from: 500-level literature (not including Literature in Translation) and/or Linguistics 594, 595, and/or Stylistics 584.....	12
Sub-total	20

Note: If upper-division courses in 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 8.

Linguistics and methods	Credits
12 graduate credits chosen from:	
WLL 593 Language Proficiency Testing and Teaching	
WLL 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 a world language 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
WLL 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:

- 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.

World Languages

WLL 199
Special Studies (Credit to be arranged.)

WLL 299
Special Studies (Credit to be arranged.)

***WLL 335**
Icelandic Sagas (4)

Explores the sagas and the cultural milieu in which they were created. Conducted in English. Recommended prerequisite: Sophomore Inquiry.

WLL 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.

WLL 399
Special Studies (Credit to be arranged.)

WLL 401/501
Research (Credit to be arranged.)

WLL 403/503
Thesis (Credit to be arranged.)

WLL 404/504
Cooperative Education/Internship (Credit to be arranged.)

WLL 405/505
Reading and Conference (Credit to be arranged.)

WLL 407/507
Seminar (Credit to be arranged.)

WLL 408/508
Workshop (Credit to be arranged.)

WLL 409/509
Practicum (Credit to be arranged.)

WLL 410/510
Selected Topics (Credit to be arranged.)

***WLL 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.

***WLL 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.

***WLL 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.

***WLL 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.

WLL 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 for prospective language teachers. Recommended prerequisite: three years of a foreign language. Conducted in English.

WLL 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.

American Sign Language

ASL 101, 102, 103
First-year American Sign Language (4, 4, 4)
Basic mastery of American Sign Language (ASL). Covers ASL vocabulary, grammatical structure, and elements of Deaf culture. Includes sign language practice in class and in the Deaf community. Expected preparation: ASL 101 for ASL 102, ASL 102 for ASL 103.

ASL 201, 202, 203
Second-year American Sign Language (4, 4, 4)
Expansion and refinement of first-year comprehension and production skills; expansion of grammatical and lexical repertoires through task-based instruction in transactions such as asking/giving directions, making plans, describing and identifying people, places, and things, giving simple instructions, and telling what happened. Expected preparation: ASL 103 for ASL 201, ASL 201 for ASL 202, ASL 202 for ASL 203.

ASL 201, 202, 203
Second-year American Sign Language (4, 4, 4)
Expansion and refinement of first-year comprehension and production skills; expansion of grammatical and lexical repertoires through task-based instruction in transactions such as asking/giving directions, making plans, describing and identifying people, places, and things, giving simple instructions, and telling what happened. Expected preparation: ASL 103 for ASL 201, ASL 201 for ASL 202, ASL 202 for ASL 203.

Arabic

Ar 101, 102, 103
First-year Standard Arabic (4, 4, 4)
Introduction to modern literary (fus-ha) Arabic: Emphasis on reading and writing the cursive Arabic script, accurate pronunciation, comprehension of basic texts, translation, vocabulary, dictation, basic grammar and syntax, writing Arabic compositions, and media to facilitate the learning of simple communications in standard spoken Arabic. 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: Emphasis on reading prose texts dealing with the popular standard language, expanded grammar and syntax, writing Arabic compositions, translation, enhanced vocabulary, dictation, and media for better listening comprehension of standard spoken Arabic, for expanded conversations dealing with daily life. Pre-requisite: Ar 103. For non-native speakers of Arabic only.

Ar 204, 205, 206
Common Spoken Arabic for Beginners (4, 4, 4)
Popular spoken Arabic (‘ammiyyah/darijah) used in social gathering and general daily life encounters. Does not replace Ar 201-2-3. For non-native speakers of Arabic only. Prerequisites: Ar 103.

Ar 299
Special Studies (Credit to be arranged.)

Ar 301, 302, 303
Third-year Standard Arabic (4, 4, 4)
Intermediate modern literary Arabic prose: Emphasis on reading prose texts dealing with a wide spectrum of daily-life topics in their social-cultural context; advanced grammar and syntax (weak verbs, weak nouns, doubled verbs, verb moods, and the conditional); translation of complex texts, writing expanded Arabic compositions; media and Arabic web-sites to enhance conversational skills. Prerequisite Ar 203. For non-native speakers of Arabic only.

Ar 304, 305, 306
Intermediate Common Spoken Arabic (4, 4, 4)
Practical pan-Arab spoken Arabic used in social, intellectual gatherings and business in lieu of limited local spoken “dialects,” or the fus-ha (literary Arabic), understandable and usable anywhere in the Arab world. For non-native speakers of Arabic only. Does not replace Ar 301, 302, 303. Prerequisites: Ar 203 and Ar 206.

***Ar 311**
Intermediate Media Arabic (4)
Reading and translating intermediate-level Arabic newspaper and journal materials; viewing selected media and news websites. For non-native speakers of Arabic only. Does not replace Ar 301, 302, 303. Prerequisites: Ar 301, 302, 303.

Ar 330
Arabic Calligraphy: Reading and Writing (4)
Introduction to Arabic script since the fifth century A.D.; presentation of early prominent pens and styles; reading various exhibits covering all major styles; mastering the writing of the ruq’ah style. Does not replace Ar 301, 302, 303.

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 412/512**
Advanced Arabic Reading & Writing: Essay (4)
Reading and translating advanced Arabic essays written by prominent Arab authors in various genres presenting social cultural topics, and writing critiques in Arabic. Prerequisites: Ar 303 or consent of instructor.

***Ar 413/513**
Advanced Modern Standard Arabic: Short Story and Novel (4)
Reading modern Arabic short stories, condensed novels, or short biographies of prominent Arab authors; viewing related films; writing critiques in Arabic. Prerequisite: Ar 412/512 or consent of instructor.

***Ar 414/514**
Advanced Classical Arabic: Prose (4)
Introduction to the history of Arabic prose (7th – 18th century AD); reading selected advanced texts

from classic literary works of major authors such as Ibn al-Muqaffa' "*al-adab al-kabir*" (*The Grand Literature*); al-Jahiz "*al-bukhla*" (*The Misers*); al-Isfahani "*kitab al-aghani*" (*The Book of Arabic Songs*); Ibn 'Adiy "*tahdhib al-akblaq*" (*The Reformation of Morals*) and Ibn 'Abd Rabbuh "*al-'iqd al-farid*" (*The Unique Necklace*); translating texts and writing literary reviews in Arabic.

Prerequisites: Ar 412/512 or consent of instructor.

***Ar 419/519**

Folk Proverbs of the Arabs (4)

Reading and analyzing selected Arabic folk proverbs representing a wide range of critical social-cultural issues and moral values; writing critiques. Quoted texts are in Arabic. Class is conducted in English. Prerequisites: Ar 301 & Ar 304 or consent of instructor.

***Ar 420/520**

Folk Tales of the Arabs (4)

Introduction to the oral tradition of the Arabs since early times; analysis of selected folk tales or epics; viewing cultural videos; writing short critiques. Quoted texts are in Arabic. Class is conducted in English. Prerequisites: Ar 301 & Ar 304 or consent of instructor.

***Ar 421/521**

Extemporized-Sung Poetry and Folk Songs of the Arabs (4)

Reading, translating, and analyzing selected texts of extemporized-sung folk poetry (zajal) covering major genres and lyrics of folk songs composed in the vernacular Arabic; viewing videos of social occasions during which the above genres are performed; writing critical analysis of poems. Quoted poems are in Arabic. Class is conducted in English. Prerequisites: Ar 412/512 & Ar 306 or consent of instructor.

***Ar 423/523**

Modern Arabic Poetry (4)

Reading, translating, and analyzing selected modern Arabic poems from prominent Arab poets covering a wide range of issues and genres; writing critical analyses of poems. Prerequisites: Ar 412/512 or consent of instructor.

***Ar 424/524**

Classical Arabic Poetry (4)

Reading, translating, and analyzing selected texts of classical Arabic poems from prominent Arab poets of early Arabia and al-Andalus covering a wide range of major issues; writing critical analy-

ses of poems. Prerequisites: Ar 412/512 or consent of instructor.

***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.

***Ar 490/590**

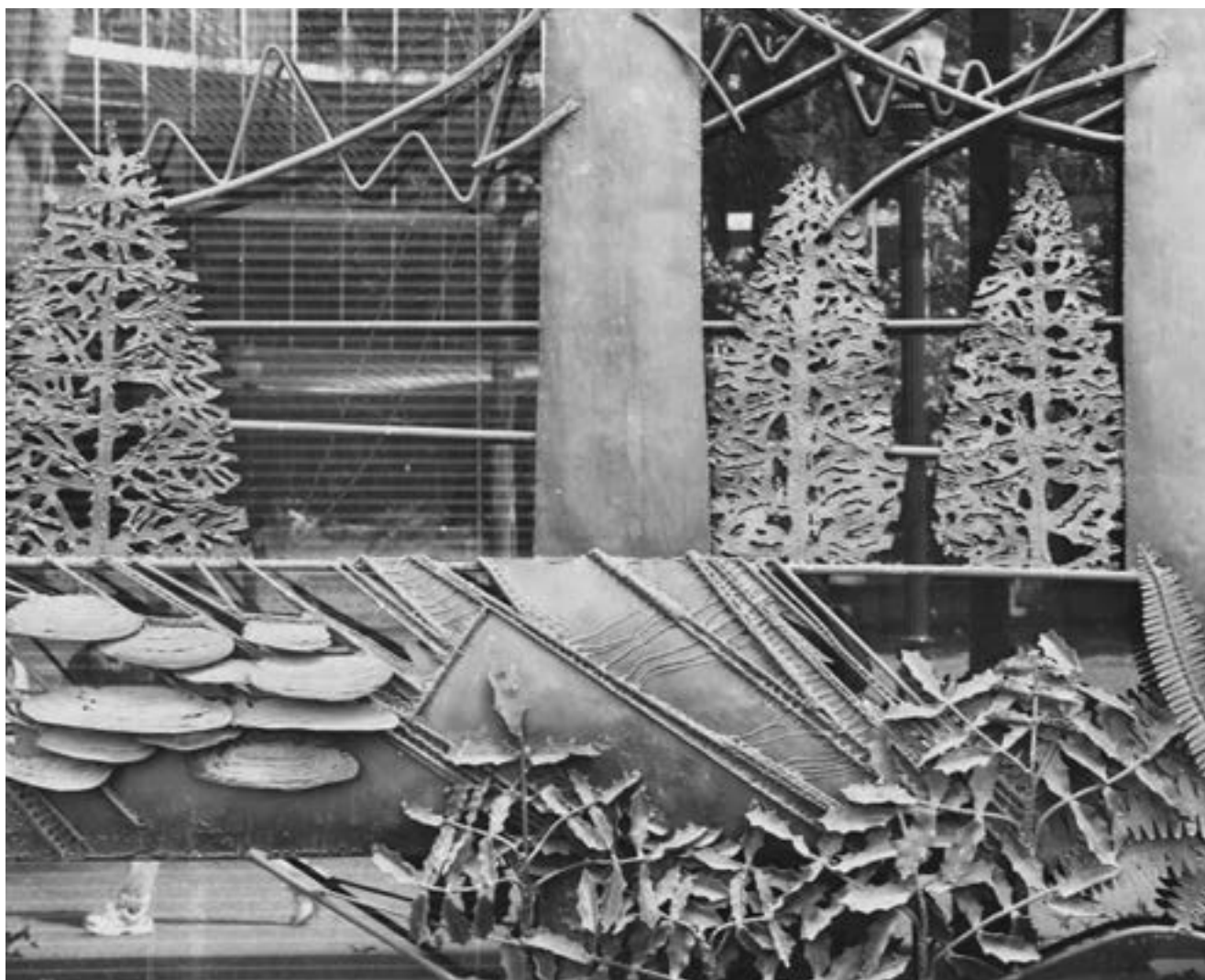
Advanced Arabic Syntax (4)

History of the major schools of Arabic grammar and syntax of al-Kufah and al-Basrah; contribution of prominent grammarians: Abu al-Aswad al-Du'ali, al-Khalil Ibn Ahmad, and Sibawayh; major rules of Arabic syntax; the use of the connectors in Modern Standard Arabic. Prerequisites: Ar 412/512 or consent of instructor.

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. Expected preparation: Chn 303.

***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: extensive 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 Dogme movement. Readings, lecture, and discussion in English.

***Dane 399**

Special Studies (Credit to be arranged.)

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 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 320

French for the Working World (4)

Intensive application of language for advanced everyday proficiency, career exploration, job seeking and development of an actual student-run

company. Participants will practice and improve their language skills by using them to develop product ideas, conduct market research and sales campaigns, manage company finances and plan the future of the enterprise. Expected preparation: Fr 203 or equivalent proficiency.

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 326
French Conversation (4)

Developing speaking and listening skills in French. Some grammar review and readings to stimulate discussions. Prerequisites: 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 (1789-1890s). 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 literature, its forms and genres, techniques, and themes, and to French literary criticism. Course focus is on the practice of writing literary commentary, analysis and criticism in French. To be taken prior to or concurrently with Fr 341, 342, or 343. Expected preparation: Fr 203; Fr 301 or Fr 302 strongly recommended.

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. 341: medieval and Renaissance; 342: 17th and 18th centuries; 343: 19th and 20th. Prerequisites: Fr 340 must be taken concurrently or prior to enrollment in 341, 342, or 343. Expected preparation: Fr 203; Fr 301 or Fr 302 strongly recommended.

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.)

Fr 407/507
Seminar (Credit to be arranged.)

Fr 408/508
Workshop (Credit to be arranged.)

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 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**
Nineteenth-century French Literature (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**
Twentieth-century French Literature (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 prerequisite: 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**
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 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.

German

Ger 101, 102, 103
First-year German (4, 4, 4)

Beginning German. Emphasis on communication skills: listening, speaking, reading, writing. Should be taken in sequence.

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. Should be taken in sequence.

Ger 299
Special Studies (Credit to be arranged.)

Ger 301, 302, 303
Third-Year German (4, 4, 4)
Continued development of speaking, listening, reading and writing skills through study of appropriate texts, conversation, activities, and written assignments. Expected preparation: Ger 203.

***Ger 320**
German for the Working World (4)

Intensive application of language for advanced everyday proficiency, career exploration, and employment. Exploration of German-speaking companies: business practices, corporate structure, human resources, product development, marketing, finance, law, cultural aspects. Development of skills in different modes of communication as appropriate in business settings. Hands-on development of simulated or actual student-run companies. Expected preparation: 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, the present, or in fields such as film. Expected preparation: 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.)****Ger 407/507****Seminar (Credit to be arranged.)****Ger 408/508****Workshop (Credit to be arranged.)****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 420**German for the Working World (4)**

Intensive application of language for upper-level advanced proficiency, career exploration, and employment. Exploration of German-speaking companies: business practices, corporate structure, human resources, product development, marketing, finance, law, cultural aspects. Development of skills in different modes of communication as appropriate in business settings. Hands-on development of simulated or actual student-run companies. Prerequisites: Ger 301 or equivalent whether taken previously or concurrently.

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 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. Expected preparation: 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. Expected preparation: 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 pre-

requisites: 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 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. Recommended prerequisite: Grk 103.

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. Conducted in English.

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.

Grk 336*Ancient Greek Comedy (4)**

A survey of ancient Greek comedy, covering all of the extant plays of Aristophanes, as well as largest surviving fragments of the plays of Menander. Taught in English.

Greek, Modern

MGrk 101, 102, 103**First-Year Modern Greek (4, 4, 4)**

An introduction to elementary modern Greek. Emphasis on listening comprehension and oral practice, the elements of grammar, vocabulary building and elementary readings.

MGrk 201, 202, 203**Second-Year Modern Greek (4, 4, 4)**

Intensive review of basic materials introduced in first-year program and further development of communication skills. Prerequisites: MGrk 103 or instructor's permission.

MGrk 301, 302, 303**Third-Year Modern Greek (4, 4, 4)**

Intermediate to advanced Modern Greek. Intensive grammar review and listening comprehension. Extensive oral and written practice. Prerequisites: MGrk 203 or instructor's permission.

MGrk 330**Modern Greek Culture and Civilization (4)**

A multimedia survey of major trends and developments in Modern Greek culture from 1830 to

present. Includes topics in religion, social customs, traditions, gender roles in family and social life, language, literature, music, cinema and the Greek Diaspora. Taught in English.

MGrk 361

Modern Greece through Film (4)

Feature films followed by short lectures on the history of Modern Greek cinema from 1950 to present and discussions of their social and artistic significance to contemporary Greek culture. Focus on gender and migration. All films have English subtitles. Readings and discussions are 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.)

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. Recommended prerequisite: It 103.

It 299

Special Studies (Credit to be arranged.)

It 301, 302, 303

Third-year Italian (4, 4, 4)

Composition and conversation at the intermediate level. Recommended prerequisite: It 203.

It 330

Italian Culture and Civilization (4)

Surveys major trends and development in Italian culture and civilization from its origins to the present. Includes historical, political, social, artistic and intellectual perspectives. Taught in English.

It 341, 342

Introduction to Italian Literature (4, 4)

Overview of Italian literature from late 1600s to present. It 341 focuses on 1600s to 1800s. It 342 focuses on late 1800s to present. Introduction to representative authors and their influence on Italian and Western civilization. Study of major literary and cultural movements. Recommended prerequisites: It 203.

*It 390

History of Italian Language (4)

Introduction to the history of the Italian language, from late 800 AD to 1900. Introduction to the most representative documents that shaped the Italian language and to the differences between the various Italian dialects. Focus on the importance of the work by Dante Alighieri, Francesco Petrarca and Giovanni Boccaccio, Renaissance authors and major linguistics theories of 1800. Taught in Italian. Expected preparation: 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 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, majors, and teachers.

Jpn 341, 342, 343

Topics in Japanese Literature (In Translation) (4,4,4)

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 introduction to modern literature; Jpn 343 focuses on the modern period. Conducted in English. Expected preparation: 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 401/501

Research (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 423/523

Modern Japanese Poetry (4)

An introduction to modern Japanese poetry including new forms (*shi*) and modern variations on traditional forms (*tanka*, *haiku*). Students read poems in Japanese, analyze syntax, learn genre requirements, and understand the history of modern Japanese poetry. Prerequisites: Jpn 416 and 417.

Jpn 424/524

Contemporary Japanese Poetry and Pop Culture (4)

An introduction to contemporary Japanese pop culture including free verse, traditional *tanka*, song lyrics, and comic books (*manga*). Students read verse in Japanese, analyze syntax, learn genre requirements, and understand the history of modern Japanese poetry and songs; students analyze sequential-art narratives to understand multiple aspects of Japanese pop culture. Prerequisites: Jpn 416 and 417.

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 prerequisites: 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 prerequisites: Kor 203.

Kor 330

Topics in Korean Culture and Civilization: Korean Popular Culture (4)

A multimedia survey of development and trends of Korean popular culture in contemporary Korea. Examines various forms of its popular culture—including K-pop, TV dramas, cinema, food, fashion, and the Internet—and studies their implications in social, political, historical, and economical contexts. Conducted in English.

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 prerequisites: 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 prerequisites: 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.)

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 prerequisites: 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)

Intensive review of basic materials introduced in first-year Persian program and further development of communication skills. Expected preparation: Per 103.

Per 299

Special Studies (Credit to be arranged.)

***Per 301, 302**

Third-year Persian (4, 4)

Focus on acquisition of vocabulary, practical application. Intensive practice in speaking, listening, reading, and writing. Expected preparation: Per 203.

***Per 330**

Persian Culture and Civilization (4)

A multimedia survey of major aspects of 2500 years of Persian civilization including traditions, art, music, architecture, handicrafts, literature, cities, and sports. Reflects Persian culture from the glories of Iran's past to contemporary scenes of rural life. Taught in English.

***Per 341**

Introduction to Persian Literature (4)

Selected texts from classical and modern Persian poetry and prose including epic, lyric, and mystic traditions placed in historical contexts. Covers the most important genres such as the *Qasida*, the *Ghazal*, the *Ruba'i* and the *Masnavi*. Prerequisites: Per 301.

Per 399

Special Studies (Credit to be arranged.)

Per 401

Research (Credit to be arranged.)

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 prerequisites: 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 prerequisites: 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 111, 112, 113

Introduction to Flagship Studies (1, 1, 1)

An introduction to issues related to language acquisition, proficiency standards, and assessment instruments for students in the Russian Flagship Program. Prerequisites: admission to the Russian Flagship Partner Program.

Rus 150, 151, 152

Introductory Flagship Russian (6, 6, 6)

Team-taught intensive introduction to fundamentals of Russian focusing on language production in high-frequency settings. Conducted primarily in Russian, the course prepares students for study in Russia and is a prerequisite for further study in the Russian Flagship Program. Prerequisites: admission to the Russian Flagship Partner Program.

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 listen-

ing, 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 331

Russian Film (4)

Surveys cinematic narratives significant to Russian culture, with a focus on issues of gender and/or national identity. 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.)

Rus 407/507

Seminar (Credit to be arranged.)

Rus 408/508

Workshop (Credit to be arranged.)

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 414/514

Advanced Russian Grammar (4)

Systematic study of Russian grammar for advanced students and prospective teachers. Conducted in English. Recommended prerequisite: Rus 301.

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 420/520

Topics in Russian History (4)

A content-based language course based on study of major issues in Russian and Soviet history such as Peter I, Westerners and Slavophiles, the Thaw,

and others. Expected preparation: Rus 342. Prerequisites: junior standing. May be repeated for credits when topics differ.

*Rus 421/521

Topics in Contemporary Russian Culture (4)

Study of current issues in post-Soviet society such as political processes, educational reform, migration, and others. Expected preparation: Rus 342. May be repeated for credit when topics differ.

*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. May be repeated for credit when topic differs.

*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. May be repeated for credit when topic differs.

*Rus 441

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

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 444, 445, 446

Flagship Studies: Globalization (2, 2, 2)

A Russian across the curriculum course aligned with PSU's University Studies Program. Flagship students develop advanced reading, writing, speaking and listening skills while exploring "Globalization" in Russian. Prerequisites: admission to the Russian Flagship Program.

Rus 454

Flagship Studies: American Studies (2)

A Russian across the curriculum course aligned with PSU's University Studies Program. Flagship students perfect advanced reading, writing, speaking and listening skills while exploring the U.S. Jazz Age in Russian. Prerequisites: admission to the Russian Flagship Program.

Rus 455

Flagship Studies: European Studies (2)

A Russian across the curriculum course aligned with PSU's University Studies Program. Flagship students perfect advanced reading, writing, speaking and listening skills while exploring the modern European history and culture in Russian. Prerequisites: admission to the Russian Flagship Program.

Rus 456

Flagship Studies: Environmental Sustainability (2)

A Russian across the curriculum course aligned with PSU's University Studies Program. Flagship students perfect advanced reading, writing, speaking and listening skills while exploring the questions of ecology and sustainability in Russian.

Prerequisites: admission to the Russian Flagship Program.

Rus 457, 458, 459

Flagship Studies: Russian in the Major (2, 2, 2)

A Russian across the curriculum course designed to permit advanced Flagship students to develop appropriate vocabulary, discourse strategies, and research skills in their respective majors.

Prerequisites: admission to the Russian Flagship Program.

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 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, 303

Third-year Spanish (4,4,4)

Continued work on the Spanish language at intermediate-advanced level. Prepares student for upper division classes. Intensive grammar review. Span 301 emphasizes listening comprehension and speaking. Recommended prerequisite: Span 203. Span 302 emphasizes reading and writing. Highly recommended prerequisite: Span 301. Span 303 emphasizes oral and written skills in order to prepare student for literary analysis and critical writing. Prerequisites: Span 301 and Span 302.

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). Prerequisites: Span 301, 302, and 303.

***Span 330**

Peninsular Culture and Civilization (4)

Historical development of life, thought, and the arts in Spain. Prerequisites: Span 301, 302, and 303.

***Span 331**

Latin American Culture and Civilization (4)

Historical development of life, thought, and the arts in Latin America. Prerequisites: Span 301, 302, and 303.

Span 340

Fundamentals of Spanish Literary Studies (4)

Introduction to the study of Spanish literature. Lectures and discussions on Spanish prosody, genres, fundamentals of literary analysis, and criticism. Prerequisites: Span 303.

Span 341, 342, 343, 344

Introduction to Hispanic Literature (4, 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: Pre-Colombian to 19th century Latin American literature. 344: Latin American literature from the end of the 19th century to the present. Readings from representa-

tive texts. Prerequisites: Span 301, 302, 303 and 340.

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.)

Span 407/507

Seminar (Credit to be arranged.)

Span 408/508

Workshop (Credit to be arranged.)

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. Prerequisite: Span 303.

Span 414/514

Advanced Spanish Grammar (4)

A thorough study of grammar and syntax for majors and prospective teachers. May be taken concurrently with Span 411/511. Prerequisite: Span 303.

***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. Prerequisites: 8 credits of Span 341, 342, 343, or 344.

***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. Prerequisites: 8 credits of Span 341, 342, 343, or 344.

***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, Jiménez, and Cernuda. Prerequisites: 8 credits of Span 341, 342, 343, or 344.

***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 Márquez, Fuentes, Paz, Vargas Llosa, Mastretta, and Borges. Prerequisites: 8 credits of Span 341, 342, 343, or 344.

***Span 428/528**

Major Topics: Latin American Drama (4)

Study, analysis, and critique of major dramatic works of Latin America by authors such as Gámbaro, Benedetti, Usigli, Díaz, and de la Parra. Prerequisites: 8 credits of Span 341, 342, 343, or 344.

***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, Guillén, and Mistral. Prerequisites: 8 credits of Span 341, 342, 343, or 344.

***Span 430/530**

Major Topics: Ibero-American Film (4)

Study, analysis, and critique of films from Ibero-America on such topics as national film traditions, Cinema Novo, Third Cinema, violence, migration, gender studies, and globalization. Course may be repeated for credit when topics vary. Prerequisites: at least 8 credits of Span 341, 342, 343, or 344.

***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, 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. Prerequisites: at least 8 credits of Span 341, 342, 343, or 344.

***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, Prose & Poetry of Borges, and Pre-Colombian Literature. Course may be repeated for credit when topics vary. Prerequisites: at least 8 credits of Span 341, 342, 343, or 344.

***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 Márquez. Readings, lectures, and discussions in English. Prerequisites: 4 credits of upper-division literature.

***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. Prerequisites: Span 303 and 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. Prerequisites: Span 303 and 325. Expected preparation: 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. Prerequisite: Span 303. Recommended prerequisites: 4 credits of linguistics.

Span 498/598

Spanish Syntax (4)

A practical approach to Spanish Syntax. Study and analysis of syntactical functions and sentence structure. Emphasis on modern grammatical theory and findings. Examination of discourse connectors. Prerequisite: Span 303. Expected preparation: 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.

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.

Swah 301, 302, 303**Third-Year Swahili (4, 4, 4)**

Focus on acquisition of vocabulary, practical application. Intensive practice in speaking, listening, reading, and writing. Expected preparation: Swah 203.

Swah 330*Topics in East African Culture and Civilization (4)**

A study of literary forms, theories, and analysis of texts in their socio-cultural contexts. Topics include: oral literature, folklore, short stories, traditions and modernity, and biographies. Conducted in English.

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.)****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.

Tur 331*Women and Gender in Turkey (4)**

Explores construction of gender, women's roles and issues through modern Turkish literature and culture. Conducted in English.

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 361*Turkey Through Film (4)**

Viewing of feature films or made-for-TV series followed by discussion of social, historical, and artistic significance of the visual narratives. Individual directors like Yilmaz Güney, genres like comedy and period-dramas of the 1970s or 1960s may be used. Films have subtitles. Readings, viewings and discussions are in English.

Tur 399**Special Studies (Credit to be arranged.)****Tur 401****Research (Credit to be arranged.)****Tur 404****Cooperative Education/Internship (Credit to be arranged.)****Tur 410****Selected Topics (Credit to be arranged.)*****Tur 416****Readings in Turkish (2)**

A variable-content course designed to give advanced students of Turkish experience reading in a variety of content areas. To be taken in conjunction with regularly scheduled co-requisite courses. Students taking a co-requisite course will do part of the required reading for that course in Turkish. Recommended prerequisite: Tur 341.

School of Social Work

NANCY KOROLOFF, INTERIM DEAN
PAULINE JIVANJEE, ASSOCIATE DEAN FOR ACADEMIC AFFAIRS
Laurie Powers, Associate Dean for Research
KATHARINE CAHN, ASSISTANT DEAN FOR CONTINUING EDUCATION
600 ACADEMIC & STUDENT RECREATION CENTER, 1800 SW SIXTH, 503-725-4712
www.pdx.edu/ssw/



B.A., B.S.—Child and Family Studies
B.A., B.S. —Social Work
M.S.W.
Ph.D.

The School of Social Work was established at Portland State University in 1961 by a resolution of the Oregon Legislature. The school is committed to the enhancement of the individual and society. Further values and beliefs include a dedication to social change and to the attainment of social justice for all peoples, the eradication of poverty, the empowerment of oppressed peoples, the right of all individuals and groups to determine their own destinies, and the opportunity to live in harmony and cooperation. While the School maintains a special commitment to these values, it recognizes the need for joining with others in society who are working toward this same purpose.

Consistent with the goals of Portland State University and the Oregon University System, the three major functions of the School are teaching, research, and community service. Teaching is directed toward preparing effective and creative social workers who are ethical and culturally responsive. Social workers learn to serve individuals and families directly, evaluate practice, develop and administer programs, organize neighborhoods and communities, analyze social policies, conduct research, and initiate necessary reforms of existing practice, programs, and policies. Research and scholarship focus on understanding, preventing, and ameliorating social problems. Community service involves collaborative efforts with individuals and organizations to develop innovations in social welfare services and policies.

The School has an educational program involving seven structural components: the Child and Family Studies program; the Baccalaureate Social Work (B.S.W.) pro-

gram; the Master of Social Work (M.S.W.) program; the Distance M.S.W. Option; the Ph.D. in Social Work and Social Research program; the Center for Improvement of Child and Family Services; and the Regional Research Institute for Human Services.

Child and Family Studies

**600 Academic and Student
Recreation Center
1800 SW Sixth Avenue
503-725-8241
www.pdx.edu/ssw/cfs**

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 two diverse settings, and the

completion of a Professional Portfolio prepare students for professional roles as well as graduate school. Eleven 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, child welfare/human services, international worker, and family life educator. 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.

Degree Maps and Learning Outcomes

To view the degree map and expected learning outcomes for Child and Family's undergraduate degree, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Students must be admitted into the program to earn a baccalaureate degree in child and family studies. Admittance requirements are the completion of 90 credits and Psy 311, Psy 490 or their equivalents. 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: <http://www.pdx.edu/ssw>. The application packet includes a two to three page essay, an application form, completed reference forms, and unofficial transcripts. 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:

	Credits
Interdisciplinary Conceptual Foundations	23 credits
Ec 417 Women in the Economy (4) or WS 340 Women & Gender in America to 1848 (4) or WS 341 Women & Gender in America 1848-1920 (4) or WS 342 Women and Gender in America 1920 to Present (4) or WS 380 Women and Politics (4)	
Ed 420 Introduction to Education and Society (4)	
Hst 343 History of American Families (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 40 credits

CFS 312 Human Development in the Family Setting (4)
CFS 480 Societal Influences on Professional Practice (4)
CFS 481 Family Health Issues (4)
CFS 488 Social Justice in Child and Family Studies (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 (3, 1, 2)
CFS 497 Practicum I (5)
CFS 498 Practicum II(5)

Child and Family Studies Specializations 15-21 credits

Total **78-80**

Majors may meet with a program adviser for guidance in the selection of an area of specialization from among the eleven areas listed below. Majors are required to complete a minimum of 15 credits within the area. More than one specialization area may be selected and will require an additional 15 credits. Lists of courses recommended for each specialization are listed on the Web (www.pdx.edu/ssw/cfs) 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

Adviser: Jana Meinhold, Ph.D.

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

Adviser: Jana Meinhold, Ph.D.

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

Advisers: Ben Anderson-Nathe, Ph.D. / Alma Trinidad, Ph.D.

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

Adviser: Michael Taylor, Ph.D.

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

Adviser: Carol Morgaine, Ph.D.

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: Carol Morgaine, Ph.D.

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: Ben Anderson-Nathe, Ph.D.

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

Adviser: Carol Morgaine, Ph.D.

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. Students are eligible for early admission into the GTEP program, although admission is not guaranteed.

Child Welfare/Human Services

Advisers: Michael Taylor, Ph.D. / Alma Trinidad, Ph.D.

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.

International Worker: Children, Youth and Families

Adviser: Carol Morgaine, Ph.D.

Designed for people who want to work internationally with children, youth, or families in such areas as the Peace Corps, non-governmental organizations, project management, or humanitarian relief work. This area of study will emphasize cross-cultural understanding, language acquisition, global issues, and intercultural communication.

Family Life Educator

Advisers: Jana Meinhold, Ph.D. / Carol Morgaine, Ph.D.

Designed to develop knowledge about a broad range of topics including how families work; the inter-relationship of the family and society; human growth and development throughout the life span; both the physiological and psychological aspects of human sexuality; the impact of money and time management on daily life; the importance and value of education for parenting; the effects of policy and legislation on families; ethical considerations in professional conduct; and a solid understanding and knowledge of how to teach and/or develop curriculum for what are often sensitive and personal issues. The completion of this Specialization will also provide the necessary requirements for the Family Life Education Provisional Certification awarded by the National Counsel on Family Relations.

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.

Social Work

**600 Academic and Student
Recreation Center
1800 SW Sixth Ave.
503-725-4712
www.pdx.edu/ssw/**

The School of Social Work offers the only accredited graduate social work education program in Oregon. Two graduate 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. The School offers a Bachelor of Arts in Social Work (B.A.S.W.) degree. The BSW Program was accredited by the Council on Social Work Education in June, 2011.

Bachelor of Arts in Social Work. The Baccalaureate Social Work (BSW) Program prepares students to become professional entry-level generalist social workers to work in a variety of settings with client systems in different communities. The mission statement of the BSW Program emphasizes commitment to social justice, equity, and the eradication of poverty. The curriculum prepares professional entry-level generalist social workers to provide competent, value/ethics based, and effective services to individuals from a wide range of backgrounds. The BSW Program has five goals: (1) to provide a statewide program with the goal of preparing generalist social workers who are informed and effective leaders in challenging injustice and promoting social and economic change; (2) to prepare social workers to practice with at-risk individuals and families through strengthening the capacities of family and community systems; (3) to prepare social workers to assume the role of change agent regarding issues, policies, and community needs that affect individuals and their families and to contribute to the knowledge base of the profession; (4) to prepare generalist social workers able to work with diverse populations, integrating empirically informed practice and consumer voice within an established ethical framework; and (5) to provide a foundation for advanced graduate study in social work and prepare social workers to be lifelong learners.

The BSW Program was initiated in fall, 2008. The courses are taken within two years over six terms. The courses include social welfare history, social welfare policy, generalist social work practice, research, human behavior and the social environment, diversity electives, upper division program electives, and field education. The field practicum is taken at the same time as the generalist social work practice courses in which theory, application, knowledge, values

and ethics, and practice skills are directly applied in a variety of field settings. Students in the BSW program complete three terms of field education supervised by a qualified social worker. The field education is based on a concurrent class-and-field plan with two days each week in practicum, and weekly social work practice classes and a 1 1/2 hour field seminar on campus. Some of the field placements include: social services agencies, health and wellness services, mental health settings, child and family services, substance abuse, runaway and youth services, homeless, elder services, and other generalist social work placements.

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 leadership. Students may take courses in selected fields of service: mental health; children, youth, and families; older adults; and health care, 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 justice and social work, (3) social welfare policy and services, (4) human behavior in the social environment, and (5) research. Core courses also address 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 year and two or three classes per term in the third year. Students take 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. Since fall 2004 a three-year distance graduate education option has been offered.

The M.S.W. Distance Option program is

available in selected cities in Oregon and is delivered through a combination of on site instruction and interactive technology. In fall 2013 one new cohort of students in Eugene and one new cohort of students in Bend will begin their program of study. Cohorts in Ashland and Salem will begin their second year of study, and one cohort in Eugene will begin its third and final year of study. Recruitment for fall 2014 will begin in Salem. The Ashland and Bend programs offer all courses on site. First-year classes for students in the Eugene and Salem programs occur on the PSU campus in Portland, and classes in the second and third years occur on site for these programs.

Students may combine the M.S.W. with a Masters in Public Health (M.P.H.). To pursue this option, applicants must apply to both programs and work closely with the departments to develop a study plan that meets the requirements of both programs. Two M.P.H. program tracks are available to students who choose the dual degree option: the Health Management and Policy track (administered through the Mark O. Hatfield School of Government) and the Health Promotion track (administered through the School of Community Health). Selecting the combined M.S.W./ M.P.H. option requires one additional year of study, on average.

A certificate in gerontology may be obtained through the Institute on Aging while the student completes requirements for the M.S.W. degree. The M.S.W. program offers a course of study to prepare students for licensure as school social workers by the Oregon Teacher Practices and Standards Commission. The School also participates in the Graduate Certificate Program in Infant and Toddler Mental Health.

Doctor of Philosophy in Social Work and Social Research. The 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 Center for the Improvement of Child and Family Services are major resources for the program.

Degree Maps and Learning Outcomes

To view the degree map and expected learning outcomes for Social Work's undergraduate degree, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Bachelor of Arts in Social Work. Students must be admitted to the Baccalaureate Social Work (BSW) program in order to complete the requirements for the Bachelor of Arts degree with a major in social work (B.A.S.W.). Students are admitted as juniors (90 credits completed). A cohort will be admitted annually during spring term. Additional information and an application form can be obtained by calling 503-725-4712, by writing Portland State University, School of Social Work, PO Box 751, Portland, OR 97207, or by visiting the School's Web site, www.pdx.edu/ssw/.

Applicants to the BSW program must have completed at least one course in psychology, Psy 200, and one in sociology, Soc 200. SW 301 Introduction to Social Work is also advised, since this course is designed in part to assist interested students in selecting social work as a profession. If applicants have not completed this requirement prior to admissions they must take it once they are enrolled in the major.

The application packet includes an application form, questions for a brief personal essay, two reference forms and unofficial transcripts. Students will be required to attend an orientation session prior to beginning their course of study. Orientation schedule information will be provided at the time of admission. Reading the BSW Program Handbook online is recommended.

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: School of Social Work, Portland State University, P.O. Box 751, Portland, OR 97207. The telephone number is 503-725-4712 or 725-3949. Application materials for the M.S.W. program are available on-line through the school's Web site at: <http://www.pdx.edu/ssw/>.

The M.S.W. program of the 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 natural sciences, 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 on 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.

For the M.S.W.-M.P.H. dual degree, students need to submit separate applications to each program (the School of Social Work and either the School of Community Health or the Mark O. Hatfield School of Government, depending on the focus of study) and will need to meet the minimum requirements for each program. The MSW Program and the MPH Health Promotion track admit students in Fall term, while the MPH Health Management and Policy track admits students every quarter. Additional guidelines for admissions for Social Work are at <http://www.pdx.edu/ssw/>, Health Promotion at <http://www.pdx.edu/schl/>, and Health Management and Policy at <http://www.pdx.edu/hatfieldschool/>.

It is possible to add a second program after beginning one program, if the student completes an application and is accepted by the second program during her/his first year in the entry program. Students must take classes in both programs at the same time for at least one term.

Doctor of Philosophy in Social Work and Social Research. Applicants for admission must have a master's degree in social work or a related field, with the exception that strong candidates with only a bachelor's degree will be considered for the combined MSW/Ph.D. program. Students with a master's degree in another field may choose to 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 years of practice experience in social work or a related field is recommended. Students must apply to and be accepted into the doctoral program and be admitted 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 Web site at: www.pdx.edu/ssw/.

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 68.

Degree Requirements

Bachelor of Arts and Bachelor of Science in Social Work

Requirements for the Major. In addition to meeting the general University requirements for a Bachelor of Arts degree, majors must complete the following program components:

Professional Course Requirements.....	48 credits
SW 301 Introduction to Social Work (4)	
SW 339 Introduction to Oppression & Privilege (3)	
SW 340 Advocacy For Policy Change (4)	
SW 341 Social Justice Practice (3)	
SW 350 Human Behavior through the Lifespan (4)	
SW 351 Beginning Generalist Practice (3)	
SW 400 Practicum and Seminar I, II, III (4, 4, 4)	
SW 430; SW431; SW432 Generalist Social Work Practice I, II, III (3, 3, 3)	
SW 450; SW451 Research Methods for Social Work Practice I, II (3, 3)	
Diversity Electives.....	12 credits
Students must choose one course from each of three lists of courses: (a) Culture/History; (b) Family/Gender/Sexuality; and (c) Race/Class/Identity. Prospective students may consult a complete list of approved courses under each topic area at the School's Web site, www.pdx.edu/ssw/ , where undergraduate program requirements are included in an on-line B.S.W. Student Map.	
Upper Division Program Electives.....	12 credits
Total	72

Master of Social Work. The M.S.W. is a 78 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 10 credits of bridge courses taken at PSU, and additional requirements, or
2. Completion of a 42 credit graduate foundation course sequence at PSU, which includes the following courses: SW 500 Field Instruction (4 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 (3 credits fall term, 4 credits each winter and spring terms), SW 539, Diversity and Social Justice (3 credits, fall term only), SW 540, SW 541 Human Behavior in the Social Environment (3 credits each winter and spring terms), SW 550, Foundation of

Social Work Research (3 credits winter term only), and SW 551 Data Analysis in Social Work Research (3 credits spring term only).

The second, or advanced level, involves an additional 36 credits of advanced graduate coursework in concentration requirements, including advanced electives in social work practice, human behavior in the social environment, policy, and research, and other electives. Students may not receive credit for life experience or previous work experience or have any field experience or professional foundation courses waived on this basis.

Students in the M.S.W.-M.P.H. dual degree option may share a maximum of one-third of the credits needed for the smaller degree program. Consequently, students will need 119-124 credits (depending on MPH Program track) to graduate with M.S.W. and M.P.H. degrees.

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 choose a cognate area and must take 6 credit hours outside of the 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.

Required Coursework for the Ph.D.

Core Courses..... 47 credits
 SW 620 Social Problem Analysis:
 Assessment Phase (3)
 SW 621 Social Problem Analysis:
 Intervention Phase (3)
 SW 622 Social Problem Analysis:
 Evaluation Phase (3)
 SW 630 Empirical Foundations
 of Knowledge Building in Social Work (3)

SW 631 Introduction to Quantitative
 Research Methods in Social Work (3)
 SW 632 Quantitative Data Analysis
 in Social Work Research I (4)
 SW 633 Qualitative Research I: Critical Research
 Frames and Beginning Practices (3)
 SW 634 Quantitative Data Analysis
 in Social Work Research II (4)
 SW 635 Qualitative Research II: Collecting Data
 for Interpretive & Constructivist Research (3)
 SW 637 Qualitative Research III: Making Sense of
 Qualitative Research Findings (3)
 SW 640-642 Research Practicum
 and Seminar (2, 2, 2)
 SW 650 History and Philosophy of
 Social Welfare and Social Work (3)
 SW 660 Ph.D. Seminar (1)—required for six terms

Elective Courses..... 16 credits
 Cognate Electives—6 credits taken outside the
 School
 Other Electives—10 credits
 Dissertation..... 27 credits
 Total 90

Comprehensive examination. A written and oral comprehensive examination is taken after completion of foundation coursework.

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. 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 School of Social Work, Portland State University, P.O. Box 751, Portland, OR 97207 or through the SSW Web site at www.pdx.edu/ssw/.

Courses

Courses with an asterisk () are not offered every year.*

Child and Family Studies

CFS 312

Human Development in the Family Setting (4)

This course offers a deeper understanding of family life and its intersection with individual development across the lifespan. Life Course Theory will provide the foundation for understanding the dynamic experiences of families as we explore physical, social/emotional, and cognitive development from birth to death. Students will have the opportunity to critically process developmental theories through lecture, discussion, videos, and assignments. There will be a focus on issues of diversity, anti-oppression, and social justice. Prerequisite: junior standing.

CFS 320

ABCs of Early Childhood Education (4)

An introductory class for students preparing for parenthood or interested in careers in early childhood education. History and philosophy; observation processes; guidance approaches; and program assessment.

CFS 382

Mental Disorders: Impact on Families (4)

Explores the etiology of mental and emotional disorders and the impact on individuals, their families and communities. The course emphasizes current social, cultural and political forces affecting individuals and families, and factors that contribute to resilience and recovery. The course includes a community-based learning component. Prerequisite: junior standing.

CFS 385

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 390

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 393

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 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.)**CFS 410****Selected Topics** (Credit to be arranged.)**CFS 450/550****Youth and Youth Work (4)**

Emphasizes multiple lenses through which young people are seen and treated. Explores youth work principles, multiple youth work traditions, experiential/outdoor education, youth development, and other dimensions of youth work. Includes community-based component for application of theory. Intended for students planning careers in education, policy, and direct service with youth. Required course for Child & Family Studies Youth Worker specialization. Graduate students will participate in one hour of additional class time per week, to be scheduled with the instructor at the first class session. Prerequisites: junior standing.

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 domestic 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 486/586**Parent and Family Education (4)**

Introduction to parenting rights, responsibilities, practices, processes, parent/child relationships, changing parenting roles and general philosophy/broad principles of family life education. Planning, observing, and evaluating family life education programs will be included through a community based experience. Recommended prerequisite: junior status.

CFS 488**Social Justice in Child and Family Studies (4)**

Examines and applies principles of anti-oppressive practice (AOP) in the helping professions served by students with degrees in Child and Family Studies. The course will present theoretical foundations for AOP grounded in discussions of power and privilege, voice, marginalization and oppression, and the role of the helping professional in working to transform oppressive social

structures, values, and behaviors. Prerequisites: CFS 480 and 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 494**Professional Development in Child and Family Studies I (3)**

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)**

Students will continue the process of documenting their achievement of the CFS Learning Outcomes and the completion of their CFS Professional Portfolio. The work of professional organizations and ethical codes of conduct in the professionalization process will continue to be explored as students prepare for their professional roles by updating resumes, writing cover letters, and developing interviewing skills. Prerequisite: CFS 494.

CFS 496**Professional Development in Child and Family Studies III (2)**

Students will complete their CFS Professional Portfolio as they document their achievement of the final CFS Learning Outcomes. They will consider the relationship between person and professional ethical decisions, the role of change agents in society, and attend a professional organization meeting. Prerequisite: CFS 495.

CFS 497**Practicum I (5)**

Child and Family Studies practicum conducted in approved professional settings with consideration for students' professional goals. Prerequisites: junior standing, admittance to Child and Family Studies Program, grade of IP in CFS 494.

CFS 498**Practicum II(5)**

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 of CFS 497 (Practicum I) senior status, and CFS 480 (completion or concurrent registration).

CFS 501**Research** (Credit to be arranged.)**CFS 505****Reading and Conference**
(Credit to be arranged.)**Social Work****SW 301****Introduction to Social Work (4)**

This course introduces the student to the profession of social work and the field of social welfare through a historical lens. This course provides the student with the foundational language, principles of social work and introduces the student to the BSW Program. It will include introduction and overview of the knowledge, values, and skills of becoming a professional generalist social worker.

SW 339**Introduction to Oppression & Privilege (3)**

Introduction and exploration of diversity, oppression and privilege frameworks; intersectionality regarding the dynamics of race, ethnicity, gender, sexual orientation, religion, (dis) ability status, and class; The course will focus on theory, knowledge, values, and beginning skills to work with individuals in the area of social justice and social work. The course will have relevant knowledge, values, and skills pertaining to acquiring the BASW. Prerequisites: admission to major.

SW 340**Advocacy for Policy Change (4)**

Current structures and history of social welfare policies and services will be examined, and students will be engaged in policy practice to advance social and economic well-being of families, groups and communities. Prerequisite: Admission to major, junior standing, SW 339.

SW 341**Social Justice Practice (3)**

Engages in generalist social work policy practice to advance social and economic well-being and to deliver effective social work services through the lens of social justice. Prerequisite: Admission to major, junior standing, SW 339, SW 340, SW 350.

SW 350**Human Behavior through the Lifespan (4)**

Theoretical and conceptual foundations of working with individuals and families throughout the lifespan in professional and community settings. Historical and socio-political issues will be integrated with theory to prepare beginning generalist social workers for effective practice in a variety of contexts. Prerequisite: Admission to the major, junior standing, SW 339.

SW 351**Beginning Generalist Practice (3)**

This course prepares students to begin practice with individuals, families, groups, communities and organizations. The course focuses on helping students to develop beginning engagement skills with particular attention to social work values and ethics, self-reflection, and the development of a professional self. Successful completion of this course is required for students to be eligible to enter a field placement (SW 400). Prerequisites: Admitted to major, junior standing, SW 339, SW 340, SW 350.

SW 399**Special Studies** (Credit to be arranged.)**SW 400****Field Placement and Seminar I-III (4)**

This course is the 9-month agency-based field practicum and concurrent field seminar where students apply generalist social work knowledge, values, and develop generalist social work skills.

The supervised field practicum and weekly field seminar facilitate students' application of social work practice skills, the integration of theoretical content and the development of critical thinking skills. This course is a core component of the BSW curriculum, allowing students to apply knowledge gained in their social work courses in real world practice settings. Corequisite: SW 430, 431 and 432.

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.)

SW 430
Generalist Practice with Communities and Organizations (3)

The purpose of this course is to prepare students to intentionally and effectively work with organizations and communities. Skills will be developed in the context of social work values and ethics, with special attention to social and economic justice. Prerequisites: Admission to major and SW 351.

SW 431
Generalist Practice with Individuals and Families (3)

Based on generalist social work practice principles, this course prepares students for practice with individuals and families. The course focuses on helping students to develop assessment and intervention skills for working with individual and families. Students will learn how to gather the information that is necessary for a holistic assessment, how to work collaboratively with service users in defining goals, and how to select and facilitate appropriate interventions. Prerequisites: SW 351, SW 430.

SW 432
Generalist Practice with Groups (3)

Based on generalist social work practice principles, this course prepares students for practice with groups. The course focuses on helping students to develop assessment and intervention skills for working with client, organizational and community groups. Students will learn how to develop a group proposal, facilitate a group, and assess group dynamics. Prerequisites: SW 431.

SW 447/547
Social Work and Sustainability (3)
Examines the role of professional social work in achieving sustainability at individual, community, regional, national, and global levels. Using a multidisciplinary perspective, the environmental, economic, and social aspects of sustainability, considered theoretically and practically. Sustainability linked to attainment of environmental, economic, and social justice. Includes community-based learning projects addressing sustainability. Prerequisites: SW 440 (BSW program) or SW 541 (graduate) or their equivalent.

SW 450
Social Work Research and Evaluation I (3)
The importance of social work research and evaluation for practice and policy. Qualitative and quantitative research, critical consumption of research, and conducting evaluations. Focuses on research that promotes social and economic justice and that encourages respect for diversity. Includes experimental designs, single system

designs, focus groups, and interviews. Covers early phases of the research process: conceptualization, design, sampling, measurement, and data collection. Emphasizes ethical issues. Prerequisites: Admission to major; SW 351.

SW 451
Social Work Research and Evaluation II (3)

Teaches next phases of the research and evaluation process: data analysis, formulation of implications of findings, and dissemination. Critical consumption of research findings as well as conducting data analysis. Qualitative and quantitative data analysis, including descriptive statistics, hypothesis testing, data analysis of single system designs, and thematic analysis. Focuses on research and evaluation that promote social and economic justice and that encourage respect for diversity. Emphasizes ethical issues. Prerequisites: Admission to major; SW 450.

SW 460
Senior Integrative Portfolio (3)

This course facilitates students' integration of past learning, both formal and informal, into a generalist social work practice framework. The interrelated nature of HBSE, social welfare policy, practice, field, and research is emphasized. Students create an integrated competency-based (10 competencies) portfolio documenting their personal and professional achievements throughout the social work program. This course provides the opportunity to synthesize and apply holistically the components (knowledge, values, and skills) of a competent generalist social worker preparing for entry-level professional social work career. Co-requisite: SW432.

SW 500
Field Instruction I-VI
(Credit to be arranged.)

SW 501
Research (Credit to be arranged.)

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 (3)
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. Prerequisites: SW 520 or SW 589.

SW 523
Health Care Policies and Programs (3)
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. Prerequisites: SW 520 or SW 589.

SW 524
Community Organization (3)
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. Prerequisites: SW 520 or SW 589.

SW 525/625
Poverty: Policies and Programs (3)
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. Prerequisites: SW 520 or SW 589.

SW 526
Social Work and the Law (3)
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. Prerequisites: SW 520 or SW 589.

***SW 527**
Political and Legislative Advocacy (3)
Exposes students to strategies and tactics for political and legislative advocacy. Emphasis is placed on developing skills for effective political lobbying, including the mechanics of political campaigns and working with policy-makers, citizens and issue-specific communities and political interest organizations. Students will be introduced to working with professional/community organizations and coalitions, local, state and federal level policy and decision-making processes, and methods to influence legislative process and adminis-

trative rule implementation. Prerequisites: SW 520 or SW 589.

SW 529/629

International Mental Health Policy (3)

Compares mental health policies from a global perspective, emphasizing United Nations and World Health Organization perspectives. Programs and policies from various countries are compared and contrasted with those of the U.S., and Oregon in particular. Prerequisites: SW 520 or SW 589.

SW 530, 531, 532

Generalist Social Work Practice I, II, III (3, 4, 4)

Three-term sequence examines the major influences on the service delivery system with emphasis on the multiple roles of the generalist social worker, and social work values and ethics. Examines the entire change process, focusing on assessment, goal formulation, intervention, evaluation, and endings through the lenses of strengths, empowerment, and ecological systems perspectives. Focus is on multiple levels of practice: individual, family, group, organization, and community. Introduction to theory and application of theoretical concepts to guide change activities. Development of interviewing skills for engagement, development of rapport, definition of purpose, assessment, intervention, and endings, taking account of cultural considerations. Integration of attention to populations at risk. Assessing and facilitating macro-level change processes. Advocacy, collaboration and teamwork examined, with emphasis on strategies of promoting equity and social justice. Must be taken in sequence. Corequisite: SW 500.

SW 533

Advanced Practice for Direct Human Services I (3)

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. Prerequisites: SW 532 or SW 589; corequisites: SW 500.

SW 534

Advanced Practice for Direct Human Services II (3)

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. Prerequisites: SW 533 or SW 589; corequisite: SW 500.

SW 535

Advanced Practice for Direct Human Services III (3)

This course builds on material presented in SW 533 and SW 534 and provides students with an opportunity to integrate knowledge gained across courses and field practicums. The primary purpose of integrating knowledge and experience is for students to develop and articulate a personal practice model, as this is an essential step to beginning a professional career. Additionally, post-masters professional development including supervision, self-care,

and licensure will be addressed. Prerequisites: SW 534 or SW 589; corequisite: SW 500.

SW 536 Advanced Community-Based Practice I (3)

First of 3-course concentration that emphasizes the person-environment interplay with a focus on the identification of multilevel assessment strategies in collaboration with local citizens, leaders, associations, and institutions. Utilizes assets-based, community development perspective to assist individuals, families, neighborhoods, and functional communities and organizations in identifying and meeting community social justice needs. Focuses on strategies for engaging groups, communities, and organizations using multicultural communication techniques and other qualitative assessment approaches. Identifies individual, group, and community resilience while assisting in assessing local strategies that strengthen protective factors and lower risk factors for ethnically and culturally diverse families, schools, neighborhoods, and communities. Prerequisites: SW 532 or SW 589; corequisite: SW 500.

SW 537 Advanced Community-Based Practice II (3)

Emphasizes the person-environment interplay with a focus on collaborative partnerships between local citizens, leaders, associations, and institutions. Builds intervention strategies based upon the asset-based, qualitative assessment techniques and perspectives utilized in identifying issues of concern that are driven by collaborative efforts. Focuses on the consumer/community perspective while assisting in implementing local strategies that strengthen protective factors and



lower risk factors for ethnically and culturally diverse families, schools, neighborhoods, and communities. Prerequisites: SW 536 or SW 589; corequisite: SW 500.

SW 538 Advanced Community-Based Practice III (3)

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; articulation of the student's personal model/framework of reference for community-based practice; and strategies for post-master's professional development and contributions to the student's field of community-based practice. Prerequisites: SW 536, SW 537 or SW 589; corequisite: SW 500.

SW 539

Social Justice in Social Work (3)

Explores diversity and oppression based on race, ethnicity, gender, sexual orientation, religion, (dis)ability status, and social class; models for intergroup relations; the historical context of group relations; and cultural variables significant to ethnic, racial and cultural minority populations. Examines social, political, and cultural processes as they affect intergroup and intragroup relations. Explores the role of social worker as border crosser, cultural learner, and agent of change. Opportunities for cross-cultural dialogue and content analysis and skills development. Requires examination of the meaning systems in which each of us is immersed, as well as examination of those meaning systems that social workers must strive to understand.

SW 540 Human Behavior in the Social Environment: Micro Theory (3)

Presents and critiques basic knowledge of human development from infancy to late adulthood in the context of individuals and families and identifies relationships between theoretical frameworks and the biopsychosocial environment. Considers populations at risk and the impact of racism and other forms of oppression on development. Provides students with knowledge of how developmental frameworks organize information about human dynamics, while still stressing the multi-causal nature of behavioral outcomes. Prerequisite: SW539.

SW 541

Human Behavior in the Social Environment: Macro Theory (3)

Presents and critiques basic knowledge of the development, behavior and change process of groups, communities and organizations. Uses social theory to provide students with conceptual frames for analyzing how the actions of both clients and social work practitioners are conditioned and constrained as well as enabled and empowered by broader social forces. Considers the effect of mezzo and macro level forces on the development and functioning of populations at risk. Prerequisites: SW 539, SW 540.

SW 544/644

Mid-life and Beyond (3)

Focuses on development in mid and late adulthood from a lifespan perspective and promotes an appreciation of the developmental potential for normal and healthy aging. Explores demographic, socio-historical and developmental characteristics of the currently emerging cohort of older adults. Focuses on current developmental theories in social cognition and identity development in mid and late adulthood, contemporary psychodynamic views, and spiritual and transcendent possibilities

for late adulthood. Addresses practice implications related to theories, especially as they relate to important developmental transitions.

Prerequisites: SW 540 SW 541 or SW 589, or admission to Gerontology Certificate Program with consent of instructor.

SW 545/645

Advanced Human Behavior in the Social Environment (3)

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. Prerequisites: SW 540, SW 541 or SW 589.

***SW 546**

Human Sexuality and Social Work (3)

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 or SW 589.

SW 550

Foundation of Social Work Research (3)

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 551

Data Analysis in Social Work Research (3)

Focuses on techniques of quantitative data analysis and introduces methods of qualitative data analysis. Considers interpreting and using results to improve social work practice including program evaluation. Covers descriptive statistics, probability theory and hypothesis testing, and inferential methods. Includes discussion of culturally sensitive research and ethical issues in social work research. Prerequisite: SW 550.

SW 552/652

Advanced Social Policy Analysis (3)

Selected social policy evaluation models and techniques reviewed, including discursive approaches. Content area foci include mental health, child welfare, disabilities and aging. Current policy initiatives covered from social welfare and legislative perspectives. Use of data analysis strategies to evaluate social welfare problems and their implications for policy development and implementation considered. Encompasses development of policy evaluation questions and design of appropriate methodologies to address those questions including evaluation design, sampling, measurement and analysis. Prerequisites: SW 520 and 551 or SW 622 or SW 589.

SW 554

Social Work and Health Care (3)

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. Prerequisites: SW 532 or SW 589.

SW 555

Social Work Perspectives on Mental Health Disorders (3)

Explores the major mental health disorders from an understanding of the biological, psychological, social and cultural determinants of mental illness. Emphasis is given to the changing roles of social workers who work with people diagnosed with a mental illness. Topics include ethics of diagnosing, history and theories of mental illness, overview of classification systems including a review of six major DSM-IV diagnostic categories, biopsychosocial model of assessment which includes diagnostic interviewing, accessing evidence-based practice (EBP) interventions, and applying practice evaluation methods to EBP strategies. Prerequisites: SW 532, SW 540 or SW 589.

***SW 557**

Psychotherapy: Theory and Practice (3)

Provides coverage of advanced mental health practice, including understanding of theory, applying techniques in clinical practice, and the current state of the research evidence for psychodynamic and cognitive-behavioral therapy. Provides practice content for clinically-oriented social work students. Prerequisites: SW 540, SW 541 and SW 533 or SW 589.

SW 558

Abuse and Trauma: Theory and Intervention (3)

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 or SW 589.

***SW 560**

Social Work with Gay, Lesbian, Bisexual, and Transgendered Individuals, Families, and Communities (3)

Explores social work practice with gay, lesbian, bisexual, and transgender individuals, their families, and communities. Students examine the policy context of practice as it is affected by institutional and cultural homophobia or heterosexism. Takes a lifespan approach to practice issues, covering topics such as: developmental theories of gender identity and sexual orientation, families of origin, 'coming-out', dating, partnering, child-rearing, defining family and community, and aging. Important topics such as gender transitioning, HIV prevention and treatment, same-sex domestic violence, and chemical dependency will be presented. Special classroom emphasis will be placed on developing practice awareness within a historical and political perspective. Prerequisites: SW 532 or SW 589.

***SW 561**

Clinical Social Work with Groups (3)

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 or SW 589.

***SW 562**

Social Work with Grief and Loss (3)

Examination of death at different stages of the life cycle. Review of theory and research about death and dying, loss, and grief resolution. Unique cultural and religious differences are emphasized. Examines social service assistance for persons, families and communities that face acute, chronic and terminal illnesses. Prerequisites: SW 532, SW 540 or SW 589.

SW 563

Social Work with Children, Adolescents, and Their Families (3)

Explores clinical social work practice with children, adolescents, and families. Emphasizes a collaborative and contextual approach that, in addition to child-focused interventions, includes work with parents, families, and groups in a variety of settings. Delineation and demonstration of specific clinical strategies and techniques with opportunities to practice and apply to field work. Prerequisites: SW 532 or SW 589.

SW 564

Social Work in Schools (3)

Uses a policy/practice perspective to prepare students for effective and culturally sensitive social work practice in early childhood and K-12 education. Presents multiple roles of school social workers and educational policies that provide context for practice. Emphasizes collaboration among families, schools, and communities. Prerequisites: SW 532 or SW 589.

SW 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 566

Social Work Practice in Child Welfare (3)

Designed for students who are either considering a career or are interested in public child welfare. Explores selected areas of child welfare related to child maltreatment. Emphasis on the critical examination of empirically based case management intervention strategies and their appropriate use with children and their families. Prerequisites: SW 532 or SW 589.

SW 567

Evidence Based Interventions for Community Mental Health Practice (3)

Reviews and critiques evidence-based interventions for community-based mental health populations. These interventions include supported employment, assertive community treatment/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. Prerequisites: SW 532, SW 540 or SW 589.

SW 568

Community Mental Health Seminar (3)

Seminar on interdisciplinary relationships among social work, psychiatry, and nursing; and on a variety of clinical, and policy topics. For students in community mental health placements and

those working with individuals with severe and persistent mental illness. Jointly offered with OHSU's Department of Public Psychiatry. Enrollment is limited to six students per term and requires instructor approval.

SW 569

Social Work in End-of-Life and Palliative Care (3)

Covers a broad range of topics related to social work and end-of-life and palliative care. Addresses: cultural and spiritual dimensions at end-of-life, pain and symptom management, hospice, ethical considerations, practice and policy guidelines, team work, mental health at end-of-life, vulnerable populations, and resources available to patients and families.

SW 571

Substance Use, Abuse and Addiction and Social Work Practice (3)

Designed to provide students with a foundation in both direct and indirect social work practice issues with clients, families and communities challenged by substance abuse and addiction. The primary goal is to assist students in further developing and integrating their social work practice frameworks with deeper understanding and skill regarding the psychodynamic, biological and ecological nature of substance abuse disorders, as well as the range of evidence-based practices available to address them. Prerequisites: SW 532 or SW 589.

SW 574

Social Work with Frail Older Adults (3)

Mental and physical frailties experienced by older adults are examined for their implications for adaptation and intervention. Mental disorders as they are uniquely characterized in late adulthood are reviewed, with special emphasis on age appropriate assessment. Psychosocial interventions for both community and institutionalized populations will include individual, family, group, and environmental approaches. Prerequisites: SW 532 or SW 589.

***SW 575**

Multicultural Social Justice Work in Action (3)

Examines current perspectives on multicultural practices for children and families marginalized due to vulnerable social status such as; ethnicity, culture, race, economic status, sexual identity and other forms of bias in the larger service systems and society. Specific assessment and intervention strategies include ethnically sensitive practice, cultural awareness and effective approaches for intervening with children, families and the social service providers. Students will examine international perspectives on effective practice with vulnerable groups and will gain an enhanced appreciation for how values and customs of the larger society shape experience and life chances for ethnically and culturally diverse people. Prerequisites: SW 532 or SW 589.

***SW 578/678**

Social Work in the Juvenile and Criminal Justice Systems (3)

Analyzes current controversies concerning the origin and meaning of criminal and delinquent 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 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. Prerequisites: SW 520 or SW 589.

SW 579

Working with Involuntary Clients (3)

Course examines legal, ethical and effective practice with involuntary clients, often members of oppressed groups. Will also address research regarding "involuntary practitioners," self-care, client advocacy, value conflicts, and reform efforts. Prerequisites: SW 532, SW 551 or SW 589.

SW 580

Introduction to Social Service Administration, Leadership and Management (3)

Introduces the student to theoretical and practical elements of social work administrative and management roles to develop and manage the conditions, processes and mechanisms that support evidence-based service delivery systems that benefit consumers, families and communities. Topics include analysis of contemporary organizational leadership task environments, internal and external assessment skills and tools, building strong coalitions and developing strong cross-sector collaborations for dynamic social problem impact and understanding theoretical underpinnings of a variety of organizational leadership approaches. Prerequisites: SW 532 or SW 589.

SW 581

Issues in Social Service Administration, Leadership, and Management (3)

Emphasizes critical leadership and management skills relevant to a variety of for-profit, non-profit and government social service agency environments including managed care principles, internal advocacy, hiring processes and procedures, staff supervision and discipline, staff ethics, sexual harassment, and equal employment opportunity laws. Analyzes management philosophy in complex organizations, team building, work with governance boards, participation in organizational planning, and program quality and development of accountability systems. Prerequisites: SW 520, SW 532 or SW 589.

SW 582

Social Service Program and Policy Development (3)

Focuses on the conceptual and behavioral skills related to planning and designing programs, program/policy evaluation, and understanding the analysis and design of agency policy and the role of policy in the change process. Students learn ways to compose statements of need, goals, objectives, interventions, action plans, evaluation approaches, and policy changes. Prerequisites: SW 520, SW 532 or SW 589.

SW 585

Fundraising, Grantwriting, and Human Services Entrepreneurship (3)

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. Prerequisites: SW 520, SW 532.

SW 589

Advanced Standing Seminar (2)

Seminar orients students accepted into the advanced standing program to the Graduate School of Social Work and the MSW program, provides a connection between BSW curriculum and advanced MSW curriculum, discusses core values and ethics associated with social work, reviews the

assessment process at five levels of social work practice, introduces incoming students to social work practice in Oregon, and assists students with successful entry into their advanced field education placement. Prerequisite: admission to advanced standing program.

**SW 590
Advanced Topics in Applied Research Methods for Social Work (3)**

Builds on foundation research methods and data analysis courses. Courses offered under this number present an evidence-based framework for social work practice and methods for analyzing quantitative data (e.g., multiple linear regression) and/or qualitative data (e.g., ethnography). Emphasizes application of methods to build knowledge in a specialized area relevant to a student's field of practice and/or to complete an evaluation of program(s) or practice. Emphasizes interpretation of results to inform effective social work practice in community and agency-based settings. May be repeated for credit. Prerequisites: SW 551 or SW 589.

**SW 591
Child and Adolescent Behavior and Development in the Social Environment: Advanced Theory and Research (3)**

Builds on foundation courses on micro and macro Human Behavior in the Social Environment and on foundation courses on research methods. Presents ecological-developmental framework and empirically-supported and culturally sensitive theories for understanding individual, family, peer, school, community, and societal influences on child and adolescent behavior and development. Presents a prevention framework for building and using research-based knowledge of behavior and development. Emphasizes integration of theory and research to guide social work practice. Prerequisites: SW 541 and 551 or SW 589.

***SW 596
Development and Utilization of Collaborative Partnerships to Support Infants, Toddlers, and Their Families (3)**

Understanding of the family and cultural contexts in which child development occurs; identify cultural, political, and socioeconomic biases within which mainstream research and theory have emerged; and understand and apply system-of-care concepts and values as they engage in relationship-based consultation. Content includes information about the roles and knowledge bases of specific disciplines as they apply to infant/toddler social/emotional development (e.g., child care, pediatrics, nursing, early intervention, mental health, allied health, child welfare). Students will learn about the roles and knowledge bases of informal family and community supports as they apply to infant/toddler social/emotional development. Students will gain knowledge and training related to infant/toddler key transitions from one setting to the next (e.g., from home to community child care, child care to preschool).

**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. Assessment phase of the problem solving process applied to the student's selected social problem. Emphasis on conducting a comprehensive analysis of the social problem, which includes identifying and defining the problem, determining its scope and consequences, and evaluating theory and evidence at various levels of social organization to explain its existence. Involves examination of the relevant cultural, historical, and political contexts.

**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 (3)**

Continuation of social problem sequence. Focuses on the evaluation phase of social problem analysis. Evaluation is a set of practices and skills in an applied area of the social sciences that requires grounding in a number of theoretical perspectives and methodological approaches. It necessitates a clear formulation of questions to be answered, an awareness of stakeholders to be considered and a plan for how data will be collected, analyzed and disseminated. Additional priorities include responsiveness to the role of consumers and sensitivity to the cultural context in which research is conducted. Practicality, usefulness and accessibility emphasized. Focuses on the demands and nuances of the science and art of evaluation. Prerequisites: SW 621, SW 634, SW 635.

**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 (3)**

Introduces students to basic quantitative methods for applied social work research and examines the assumptions underlying quantitative methods. Reviews core elements of research design and the selection of appropriate methods to address specific types of research questions with attention to questions of ethics and research across diverse populations. Includes a review of internal and external validity issues in conducting experimental and quasi-experimental designs. Provides experience in applying quantitative methods by developing a proposal for social work research project.

**SW 632
Quantitative Data Analysis in Social Work Research (4)**

Provides preparation in the selection and use of statistical methods appropriate for social work research questions. Covers descriptive statistics, probability theory, statistical inference, and basic inferential methods. Preparation for multivariate statistical methods. Empirical social work studies critiqued and discussed. Includes application and analysis laboratory. Prerequisite: SW 630, 631.

**SW 633
Qualitative Research I: Critical Research Frames and Beginning Practices (3)**

This course is the first part of a required three-term sequence that introduces students to the theoretical foundations and methods for qualitative research in social work. The class is designed to support learners with techniques and tools to approach the inquiry process from a critical perspective, as contextualized in the profession of social work. The forms of research methods covered in this research sequence (and introduced in this first course) cover qualitative research at the micro, mezzo and macro levels, specifically: individual lived experiences, society and culture, and language and communication. In order to cover each of these levels of analysis, the course will address at least one research methodology in each of the three levels. These are hermeneutic phenomenology, life history research, critical ethnography, and critical discourse analysis. Prerequisites: SW 630.

**SW 634
Quantitative Data Analysis in Social Work Research II (4)**

Introductory multivariate statistical procedures. Core topics: correlation and partial correlation, reliability and validity of measures and scale construction, and linear and logistic regression. Covers considerations of level of measurement and distributional assumptions for each statistical procedure. Balances developing theoretical understanding and hands-on running of tests and interpretation of results. Prerequisite: SW 632.

**SW 635
Qualitative Research II: Collecting Data for Interpretive & Constructivist Research (3)**

The second course of a required three-term sequence. Data collection methods with a special emphasis on collecting stories and narratives to explore the individual, group, community, organizational, and national experience. Prerequisites: SW 630 and SW 633.

**SW 637
Qualitative Research III: Making Sense of Qualitative Research Findings (3)**

The third course in the required qualitative sequence focuses on data analysis and reporting findings. Centers on methods of data description, analysis, interpretation, and presentation. Consideration of issues of power, privilege, and oppression as they relate to data analysis and representation of the experiences and perspectives of study participants, and strategies for addressing issues of researcher subjectivity and criteria for rigor. Ethical issues in analysis and dissemination will be examined. Apply qualitative data analysis methodologies with data collected during the first two courses in this sequence, as well as writing up and disseminating qualitative research.

Introduction to the uses of computer assisted qualitative data analysis software. Prerequisites: SW 633 and SW 635.

**SW 640, 641, 642
Research Practicum and Seminar (2, 2, 2)**

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. Seminar taken concurrently with practicum enables students to explore together their research experiences in their respective research projects. Students will gain deepening knowledge through comparison of experiences. Pass/no pass only. Prerequisite: SW 621, SW 634, SW 635.

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 (1)

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. May be repeated for additional credit.

SW 653
PhD Data Analysis Seminar (1)

Provides a structure to facilitate a working group of researchers who share ideas and support one another in the conduct of research. Group members may work together on research projects as well as use the group to consult about independent research projects. Expected themes include research design issues, measurement selection, rating and coding procedures, data analysis and presentation and reporting of research results. The primary focus of this group is on quantitative methods, with secondary attention to qualitative methods. Course may be repeated for credit. Prerequisite: SW 634.

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.)

Center for Improvement of Child and Family Services (Child Welfare Partnership)

1600 SW 4th Ave., 4th floor
503-725-8010

Katharine Cahn, Executive Director

The Center for Improvement of Child and Family Services integrates research, education and training to advance the delivery of services to children and families. The Center works with agency and community partners to promote a child and family service system that protects children, respects families, and builds community capacity to address emerging needs.

The Center includes the long-standing **Child Welfare Partnership**, founded in 1994. This partnership offers training, research and professional education to support Oregon's child welfare system.

Further information may be obtained at the Center Web site at www.pdx.edu/ccf

Regional Research Institute for Human Services

1600 SW 4th Ave., Suite 900
503-725-4040

Laurie Powers, Director

The Regional Research Institute for Human Services was established in 1972 by the

School of Social Work at Portland State University with a grant from the Social and Rehabilitation Service (HEW). The RRI has undertaken more than 200 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, disability, and interpersonal violence. 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. The Pathways to Positive Futures Research and Training Center was funded in 2009, with a focus on transition-aged youth. Additional major grants from the National Institutes of Health and the Institute of Education Sciences are testing interventions to promote the transition of youth in foster care.

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 initiative is to promote new standards of care in juvenile justice for young people with drug and alcohol problems. Reclaiming Futures was recently refunded to provide technical assistance to projects across the country.

The RRI enjoys a base of support from the University and has received more than \$87 million in grants and contracts over the past 10 years.

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. For more information, see www.rri.pdx.edu.

College of Urban and Public Affairs

CARLOS CRESPO, INTERIM DEAN
KRIS HENNING, ASSOCIATE DEAN
750 URBAN CENTER, 503-725-4043
www.pdx.edu/cupa/



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
E.M.P.A.
Minors in Aging Services; Civic Leadership; Criminology and Criminal Justice; Community Development; Community Health; Law and Legal Studies; Political Science; Real Estate Development; Sustainable Urban Development
Graduate Certificate in Gerontology
Graduate Certificate in Nonprofit and Public Management
Graduate Certificate in Real Estate Development
Graduate Certificate in Transportation
Graduate Certificate in Urban Design
M.A., M.S.—Health Studies
M.A., M.S.—Political Science
M.P.A.
M.P.H.
MRED—Master of Real Estate Development
M.U.R.P.—Master of Urban and Regional Planning
M.U.S.—Master of Urban Studies
Ph.D.—Public Affairs 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 Aging Services, Civic Leadership Community Health, Criminology and Criminal Justice, Community Development, Health, Law and

Legal Studies, Political Science, Real Estate Development, Sustainable Urban Development 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 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 affairs 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 affairs and policy prepares students for careers in public affairs and administration, including college-level teaching.

Institute of Portland Metropolitan Studies

780 Urban Center
503-725-5170
www.pdx.edu/ims/

The Institute of Portland Metropolitan Studies (IMS) is a neutral source of information and analysis about the issues facing the metropolitan region. A service and resource center in the College of Urban and Public Affairs at Portland State University, the Institute's mission is to advance the economic, environmental, and social goals of the Portland metropolitan region by gathering and disseminating credible information, convening regional partners, and stimulating dialogue and action about critical regional issues. IMS also serves as a portal to other resources of higher education for the region's communities.

The IMS sponsors research, holds forums and seminars, and gathers and disseminates data about the outcomes most important to the leaders and citizens of the Portland metropolitan area. By engaging students in its work, IMS offers opportunities to learn about regional issues and contribute to creative approaches to our most important challenges.

The IMS has an external governing board that ensures that its activities are aligned with the priorities of the leaders and residents of the region. Drawn from throughout the metropolitan region and from among private, public, and nonprofit sectors, the IMS fosters regional collaboration and dialogue among the region's key community leaders. It is a resource for all departments at

PSU and collaborates with higher education institutions across the state.

Population Research Center

780 Urban Center
503-725-3922
www.pdx.edu/prc

Through demographic research and teaching, the Population Research Center (PRC) serves the people of Oregon by addressing the causes and implications of demographic change for communities across the state.

One of the earliest research centers within the College of Urban and Public Affairs (CUPA), the center prepares official population estimates for Oregon cities and counties through the Population Estimates Program. The center also operates as the Oregon State Data Center (SDC)—where the center disseminates social, demographic, and economic data to state, regional, local, and tribal governments, and to non-governmental data users. Both programs, along with responsibilities of the Federal-State Cooperative Program for Population Estimates (FSCPE), are carried out through a long-standing partnership with the U.S. Census Bureau. The center houses historical census data, along with data from the American Community Survey and other U.S. Census Bureau products and makes these data available to faculty, students, and the general public.

Typical research activities within the center include: enrollment forecasts for school districts, demographic needs-based studies, social and economic factors affecting population change, population geography, and demographic methods. Population-based research involves close-working relationships with not-for-profit groups, non-governmental organizations, service districts, municipalities, and city, county, and various governmental agencies across Oregon.

The center's current staff includes personnel with formal training in demography, sociology, geography, economics, urban and regional planning, community health, and statistics. This variety of expertise enables the center to provide a multidisciplinary and interdisciplinary laboratory of learning for students pursuing population research.

Center faculty and staff provide demographic expertise for questions relating to data availability and techniques and also teach courses in applied demography.

School of Community Health

450 Urban Center
503-725-4401
www.pdx.edu/sch

B.A., B.S.—Health Studies
Minors in Aging Services and 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 minors in aging services and 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 five separate tracks: aging services, community health education, health sciences, physical activity and exercise, and school health.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for the School of Community Health's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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:

	Credits
Core coursework	
Stat 243 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:

	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 414 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 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)	
Other electives may be taken with advisor approval.	

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:

	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
PHE 410/510 Selected Topics.....	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 prepares 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 Nutrition for Health	4
PHE 448 Health Education Techniques and Strategies or 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
Other electives may be taken with advisor approval.	

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 and pre-physician assistant or advier approved option. 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 can be found online at <http://www.pdx.edu/clas/prepro.html>. Students must complete all prerequisites required by the professional school to which an application is being submitted to receive a Health Science degree. Please consult regularly with your pre-health adviser.

In addition to the previously listed common 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 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)
 Other electives may be taken with advisor approval.

REQUIREMENTS FOR MAJOR WITH AGING SERVICES CONCENTRATION. The aging services concentration is designed for individuals who wish to develop or enhance a career related to aging services, including such services as senior health promotion and case management, and community- or institutional-based long-term care.

Students who complete the course work required for the concentration will possess a basic understanding of gerontology with particular skills in administration and finance, chronic disease, and health promotion. This program also will enhance the skills of students planning to enroll in industry-provided training to become administrators of assisted living facilities and residential care facilities or nursing homes.

In addition to the previously listed common core requirements, students pursuing a concentration in aging services must complete the following:

	Credits
Core coursework	32
PHE 363 Communicable and Chronic Disease.....	4
PHE 410 Business and Aging	4
PHE 425 Nutrition for Health.....	4
PHE 454 Social Gerontology.....	4
PHE 456 Health Aspects of Aging.....	4
PHE 471 Program Planning and Evaluation.....	4
Soc 469 Sociology of Aging.....	4
or	
Psy 462 Psychology of Adult Development and Aging.....	4
Comm 447 Communication and Aging	4
or	
PHE 410 Families and Aging	4
and one of the following:	
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
16 credits from the following courses.....	16
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
PHE 445 Men's Health	4
PHE 451 Women's Health	4
Phl 313 Life and Death Issues	4
Psy 311 Death and Dying	4
Soc 469 Sociology of Aging.....	4
Psy 462 Psychology of Adult Development and Aging	4

PHE 410 Families and Aging
 4 || Comm 447 Communication and Aging | 4 |
PHE 410 Global Aging and Health: Focus on Nicaragua	4
PHE 446 Community Health Principles and Practices.....	4
Ec 316 Introduction to Health Care Economics ..	4
Com 318 Family Communication	4
Soc 459 Sociology of Health and Medicine.....	4
Other electives may be taken with advisor approval.	

REQUIREMENTS FOR MINOR IN COMMUNITY HEALTH.

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
Other electives may be taken with advisor approval.	

Total 28

REQUIREMENTS FOR MINOR IN AGING SERVICES.

The minor in aging services includes coursework that will introduce the student to basic understanding of gerontology along with particular skills in administration and finance, chronic disease, and health promotion. This program also will enhance the skills of students planning to enroll in industry-provided training to become administrators of assisted living facilities and residential care facilities or nursing homes.

To earn a minor in aging services, 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 requirements for this minor include:

	Credits
Core courses	20
PHE 404 Internship.....	4
PHE 465 Health Aspects of Aging.....	4
Two of the following:	
PHE 454U Social Gerontology.....	4
Soc 469 Sociology of Aging.....	4
Psy 462 Psychology of Adult Development and Aging	4
PHE 410 Families and Aging	4
PHE 410 Business and Aging	4
One of the following:	
PHE 471 Program Planning and Evaluation.....	4
PAH 570 Health Administration.....	3
PAH 588 Program Evaluation and Management in Health Services.....	3
Ec 316 Introduction to Health Economics.....	4
One of the following:	
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
Elective courses	8
PHE 250 Our Community, Our Health	4
PHE 295 Health Promotion/Disease Prevention..	4
PHE 350 Health and Health Systems	4
PHE 363 Communicable Disease and Chronic Health Problems.....	4
PHE 370 Applied Kinesiology (prerequisite: Bi 301)	4
PHE 410 Health and Housing Across the Life Course.....	4
PHE 410 Families and Aging	4
PHE 425 Nutrition for Health.....	4
PHE 444 Global Health	4
PHE 410/510 International Health and Aging.....	4
PHE 446 Community Health Principles and Practices.....	4
PHE 450 Epidemiology.....	4
PHE 473 Physiology of Exercise (prerequisites: Bi 301 & Bi 302).....	4
Comm 447 Communication and Aging.....	4
Ch 250 Nutrition	4
Other electives may be taken with advisor approval.	

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 on page 129). 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 promotion, and aging 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 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.
- Provide scores for the Graduate Record Examination and TOEFL 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 admission to the MPH is February 1st of each year. The application deadline for the MA/MS is May 1st.

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, 19 additional required credits, 6 credits of Graduate Field Experience, and 18 credits in an Area of Emphasis. The student's academic advisor must approve all program electives. All students must complete a culminating field experience and successfully pass a comprehensive examination.

The following courses are required:

OMPH Core Courses (16 Credits)	
PHE 512 Principles of Health Behavior.....	3
PHE 535 Epidemiology Survey	3
PHE 580 Concepts of Environmental Health.....	3
PH 524 Introduction to Biostatistics (offered through OHSU)	4
PAH 574 Health Systems Organizations.....	3
Health Promotion Required Courses (19 Credits)	
PHE 511 Foundatons of Public Health.....	3
PHE 517 Community Organizing	3
PHE 521 Quantitative Research Design	3
PHE 540 Mass Media & Health.....	3
PHE 550 Health Promotion Program Planning... 4	
PAH 588 Program Evaluation and Management in Health Services.....	3

Master of Arts/Master of Science in health studies. Students pursuing the M.A./M.S. degree must complete at least 48 graduate credits with a cumulative GPA of 3.00 or higher, including a core of 21 credits, and 24 additional credits from the physi-

cal activity/exercise concentration. 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 www.pdx.edu/sch.

GRADUATE CERTIFICATE IN GERONTOLOGY

The graduate certificate in gerontology provides multidisciplinary specialized training for postbaccalaureate and graduate students interested in acquiring or upgrading skills appropriate to working with or on behalf of 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 overview of the field of aging, while the internship or independent project will allow a student to acquire experiential learning in a community-based aging services 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.

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.

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 416/516**Families and Aging (4)**

Family ties of middle aged and older adults are explored using a life course perspective. The diversity of family structure and experience is emphasized with attention to gender, race, class, and ethnicity. Life transitions are highlighted as are informal and formal services available to support older adults and their families. Prerequisites: junior standing.

PHE 425**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.

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.

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.

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.

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.

PHE 453/553**Women's Reproductive Health (4)**

Critical review of current public health and sociopolitical 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.

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.

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, circulatory, and environmental factors related to fitness and health. Prerequisites: Bi 301 or Bi 302 or equivalent, or consent of instructor.

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. Prerequisites: PHE 473, or consent of instructor.

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 522/622**Health and Social Inequalities (3)**

Introduction to historical and theoretical foundations for social epidemiology; investigates the conceptualization and measurement of different social determinants of health using a lifecourse approach; explores how the "embodiment" of social forces influence disease processes; and examines different actions (i.e., behavioral, clinical, social, legislative and political) used to eliminate health inequities within our local, national and international communities.

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 influ-

ence 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 Media and Health (3)**

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 562**Global Aging (3)**

The rapid, unprecedented aging of the world's populations is resulting in myriad changes that will affect societies, cultures, economics, families, and individuals and their daily lives. Students will learn about broad global trends related to the aging of the world as well as aging in particular countries and regions.

PHE 563**Service Learning in Nicaragua (3)**

Rapid aging in Nicaragua's population will cause changes affecting individuals, families, communities, culture and economics. Students will attend class at PSU and travel to Nicaragua to learn about living conditions and support structures in place for older Nicaraguans and participate in service-learning projects to improve the lives of Nicaraguan elders. Prerequisites: PHE 562 (co-enrollment in PHE 562 and PHE 563 is allowed).

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.)****PHE 606****Special Projects (Credit to be arranged.)****PHE 607****Seminar (Credits to be arranged.)****PHE 608****Workshop (Credits to be arranged.)****PHE 609****Practicum (Credits to be arranged.)**

Physical Education

PE 185**Physical Education: Co-ed (1)**

A variety of activities taught for physiological and recreational values.

[†]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.

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.

[†]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.

Research centers and institutes

Center for Public Health Studies

450 Urban Center

503-725-4401

www.cphs.pdx.edu

Based in Portland State University's School of Community Health, the Center for Public Health Studies (CPHS) seeks to enhance the public's health by conducting interdisciplinary research exploring the interaction of health, society, and social policy. Our goals include:

- assessing the structural causes and consequences of health and disease;
- examining health behaviors in their social context;
- studying the effects of culture and the environment on our health and attitudes toward health care; and
- analyzing the political processes and social policies that affect the health status of populations.

Institute on Aging

470 Urban Center

503-725-3952

www.pdx.edu/iaa

The Institute on Aging (IOA), part of the School of Community Health in the College of Urban and Public Affairs, is a multidisciplinary research and educational organization. Established in 1969, the IOA was one of the first centers in the United States to focus on the social, psychological, and economic issues related to aging. Our research is funded by federal, state, and private sources, with projects designed to advance knowledge that serves an aging society. Educational programs are offered at the undergraduate, postbaccalaureate, master's, and doctoral levels. The IOA is actively engaged in community partnerships.

Our Mission. Institute on Aging faculty, staff, and students are dedicated to enhancing understanding of aging and facilitating opportunities for elders, families, and communities to thrive.

Research. Institute on Aging faculty specialize in research on a variety of topics, including:

- best practices in housing and long-term care;
- global aging in developing countries;
- planning for age-friendly communities;
- aging services and organizational decision making;

- work-life issues and family caregiving;
- social relationships in late life;
- research methods.

Degree and Training Programs. The Institute on Aging offers courses and areas of specialization in gerontology for undergraduate, postbaccalaureate, master's, and doctoral students, as well as research and teaching opportunities. Each of the educational programs offered provides a multi-disciplinary core curriculum in gerontology and is designed for students seeking instruction in aging services, research, and/or policy. The IOA is a member of the Association for Gerontology in Higher Education and the Oregon Gerontological Association.

Graduate Programs.

- Doctorate in Urban Studies with a concentration in gerontology.
- Doctorate in Public Affairs and Policy with a concentration in gerontology.
- The Graduate Certificate in Gerontology, which is a postbaccalaureate program for those seeking additional education in aging studies; it is offered as a stand-alone program or as an area of emphasis in conjunction with other graduate degrees.

Undergraduate Programs.

- Concentration in Aging Services within the Health Studies major.
- Minor in Aging Services.

Training for Professionals. The Institute on Aging is a partner in the Oregon Geriatric Education Consortium (OGEC), a collaboration among the Oregon Health & Science University, Portland State University, and Oregon State University, dedicated to providing training in gerontology and geriatrics to health professionals.

The OGEC Resource Center, housed within the IOA, provides reference and training materials for geriatric health care, long-term care, and higher education professionals in gerontology and geriatrics across Oregon.

Lifelong Learning. The Senior Adult Learning Center (SALC) provides opportunities for continuous intellectual enrichment and personal growth of older adults. Oregon residents aged 65 and older can register through the SALC to audit Portland State University courses on any topic with no tuition costs on a space-available basis.

The Retired Associates of Portland State University is an affiliated membership orga-

nization open to anyone aged 50 or older and sponsored by the Institute on Aging. It provides fellowship for those interested in lifelong learning and leadership opportunities.

Community Service and Partnerships.

Through partnerships with a wide variety of organizations that serve older adults locally, regionally, nationally, and internationally, faculty and students at the Institute on Aging seek to build capacity for organizations and communities to address the needs and strengths of older people living near and far. Programs are aimed at enhancing the lives of older persons who lack adequate resources in the United States and in less developed regions of the world, including Nicaragua. The goal is to test service learning, housing, and community development models for identifying and addressing some of the needs of and opportunities for elders in the United States and abroad. Other service initiatives focus on creating age-friendly communities and enhancing the quality of long-term care.

Mark O. Hatfield School of Government

Ronald L. Tammen, Director
650 Urban Center
503-725-5156
www.pdx.edu/hatfieldschool/

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; Center for Public Service; the National Policy Consensus Center; the Institute for Tribal Administration; the Center for Turkish Studies; and the Center for Women, Politics and Policy. The public affairs and policy Ph.D. program is also housed in the School of Government.

Doctoral program

Doctor of Philosophy in public affairs and policy. The Ph.D. in public affairs and policy is an interdisciplinary program designed to prepare individuals to pursue research, teaching, and/or consulting in a variety of settings ranging from 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 by 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, community health, criminal justice, policy sciences, and urban studies.

The curriculum focus is governance, the integrated study of administrative and policy processes in the public sector. This curricu-

lum 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.

The doctoral program in public affairs 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

More information about the public affairs and policy Ph.D. program and all application forms are available at www.pdx.edu/hatfieldschool. For further assistance, contact the program administrator at papphd@pdx.edu or 503-725-4044. Application materials should be sent (not emailed) to: Public Affairs and Policy Ph.D. Program, Hatfield School of Government, Portland State University, P. O. Box 751, Portland, OR 97207-0751. Applications are accepted for

fall admission only; the application deadline is 15 January.

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 affairs and policy requires 89-92 credit hours of required and elective coursework. In addition, the student receives 27 credits for dissertation research and writing.

The credits are distributed as follows:

	Credits
Core 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.

Core coursework. The core curriculum must be completed during the first year.

Core courses	Credits
PAP 611 Theoretical Foundations of Governance.....	3
PAP 612 Governance, Social Change, and Rule of Law Systems.....	3
PAP 614 Contemporary Governance.....	3
PAP 620 American Political Institutions.....	3
PAP 656 Advanced Political Economy.....	3
PAP 607 Organizational Theory and Behavior.....	3
Subtotal	18

Specialization fields (Tracks 1-4).

Students must choose one of the following tracks as their primary domain of study.

1. Public Administration and Policy (48 credit hours). Students focus on the functioning, management, and leadership of organizations in the governmental, health, and nonprofit sectors. Required courses:

- 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)

2. Politics and Public Policy (48 credit hours).

Coursework in this track emphasizes the political and economic processes affecting public policy at the local, national, and international levels.

Required courses:

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)

3. Community Health and Social Change (50 credit hours). The focus of this track is the socioeconomic, cultural, and political factors affecting public health and health promotion policy. Required courses:

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)

Students in this track who enter the doctoral program without an M.P.H. degree must take the following courses in lieu of 16 elective credit hours (18 elective credits remain):

PAH 574 Health Systems (3)

PHE 512 Health Behavior (3)

PHE 535 Epidemiology (3)

PHE 510 Introduction to Biostatistics (4)

PHE 580 Environmental Health (3)

4. Criminology and Criminal Justice (47 credit hours). Students concentrate on the causes, prevention, and control of criminal activity and public policy as it affects law enforcement and corrections. Required courses:

CCJ 615 Theories of Crime (4)

CCJ 620 Analysis of Crime and Justice Data (4)

CCJ 625 Criminal Justice Theory (4)

CCJ 630 Criminal Justice Research (4)

CCJ 635 Criminal Justice Policy (4)

PAP 616/USP 660 Policy Process (3)

Research Methods. Coursework in research methods is normally completed concurrently with field specialization coursework.

Methods courses

PS 593 Philosophy of Social Science or Soc 591 Theoretical Perspectives in Sociology..... 4

USP 630 Research Design..... 4

USP 634 Data Analysis..... 4

Electives..... 12

Subtotal 24

Dissertation Research. Students must register for a minimum of 27 credits of 603 Dissertation to represent the work of researching and writing the doctoral dissertation.

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. Part B (field

exam) covers all coursework done in the student's specialization field (Tracks 1-4).

Dissertation requirements. The dissertation process is designed to evaluate the student's ability to successfully conduct a significant, independent applied research project. The dissertation thesis represents the culmination of a student's doctoral studies.

Program Rules

A more comprehensive set of 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 Affairs and Policy Doctoral Program issued to incoming students.

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 affairs 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 affairs 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.

Courses

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.

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.

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.

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.

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.

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.

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 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.

PAP 620

American Political Institutions (3)

Survey of field of American politics, with a particular focus on American political institutions. The course provides an introduction to the basic workings of key institutions in the U.S. political system, the major areas of research and theoretical debates surrounding each, and how political scientists practice their craft in this arena.

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 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.

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.

PAP 653

Policy Analysis: Theoretical Foundations (3)

Introduction to policy analysis as a practice of creating, assessing, and communicating information that is useful for understanding and improving policies. Theoretical methods of problem structuring, forecasting, recommending, monitoring, evaluating, and improving policies.

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 694

Analysis of the Impacts of Social and Management Practices on Ecosystem Services (4)

Examination of social forces and institutions that influence use and guide policy for management of ecosystem services. Investigation of inter-jurisdictional governance of natural systems to establish law and policy that promote investment in ecosystems to create sustainable cities. This course is the same as Soc 694; may only be taken once for credit.

Criminology and Criminal Justice

550 Urban Center

503-725-4014

www.pdx.edu/hatfieldschool/criminology-criminal-justice

B.A., B.S.

Minor

Postbaccalaureate certificate

M.S.

Ph.D.—Participating division in Urban Studies Doctoral Program and Public Affairs 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 sys-

tem? 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 graduating 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.

Degree Maps and Learning Outcomes

To view the degree map and expected learning outcomes for Criminology and Criminal Justice's undergraduate degree, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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. A course grade of C- does not satisfy this requirement. 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
CCJ 200 Criminology and Criminal Justice	4
CCJ 230 Policing in America	4
CCJ 240 Punishment and Corrections	4
CCJ 310 American Courts.....	4
CCJ 320 Theories of Crime.....	4
CCJ 330 Crime Control Strategies	4
CCJ 340 Crime Analysis	4
CCJ 380 Criminal Justice Research	4
CCJ 404 Cooperative Education/Internship	8
CCJ 420 Criminal Law and Legal Reasoning.....	4

Total core credits	44
CCJ Electives	Credits
Total CCJ elective credits (minimum of 16 credits at or above 300-level)	24
Total CCJ elective credits	24
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. A course grade of C- does not satisfy this requirement. 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
CCJ 200 Criminology and Criminal Justice	4
One course from list below.....	4
CCJ 230 Policing in America	
CCJ 240 Punishment and Corrections	
CCJ 310 American Courts	
CCJ 320 Theories of Crime.....	4
CCJ 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. A course grade of C- does not satisfy this requirement. 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
CCJ 200 Criminology and Criminal Justice	4
Two courses from list below.....	8
CCJ 230 Policing in America	
CCJ 240 Punishment and Corrections	
CCJ 310 American Courts	
CCJ 320 Theories of Crime.....	4
CCJ 330 Crime Control Strategies	4
CCJ 380 Criminal Justice Research	4
CCJ 420 Criminal Law and Legal Reasoning.....	4
CCJ 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 foundations 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 Affairs 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. Departmental Application form (also available at the Division of CCJ and its web site).
2. Transcripts from each post-secondary institution attended, including PSU.
3. Two (or more) letters of recommendation 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. Graduate Record Examination (GRE) scores for consideration.
5. A 500-word statement of purpose describing academic and professional career goals, including subfields of primary interest. The statement may also be used to provide any other additional information pertinent to the applicant's qualifications.
6. Applicants required to submit TOEFL scores to the Office of Admissions should also submit them to the Division (a score of 550 or more is needed).
7. A resume or curriculum vita is optional.

8. Students interested in a Graduate Assistantship should include a completed application form (see CCJ website).

In order to be considered for regular admission to the program, applicants should have a total undergraduate GPA of 3.20 or higher or a graduate GPA of 3.20 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.

Applicants are required to submit GRE scores for consideration with their application and 2 letters of reference.

Degree requirements

All candidates for a master's degree must complete 50-54 graduate credits distributed as follows:

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.

CCJ 515 Theories of Crime.....	4
CCJ 520 Analysis of Crime and Justice Data.....	4
CCJ 525 Criminal Justice Theory.....	4
CCJ 530 Criminal Justice Research.....	4
CCJ 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 Portfolio

Candidates must complete either a thesis or portfolio. 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. Students must submit a letter of interest and thesis prospective to the CCJ Graduate Committee for approval before proceeding with the thesis option. 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. All CCJ Masters students will complete a portfolio unless they opt to be approved for a thesis. Students will create an electronic portfolio

(e-portfolio) to document, evaluate, integrate, and reflect upon their learning experiences. The purposes of the portfolio are to facilitate students' learning and intellectual development, document accomplishments, and assess students' specialized skills and professional knowledge. Successful completion of the portfolio is a graduation requirement and is a public document that can be shared with members of our academic and professional community.

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.*

*CCJ 199

Special Studies (Credit to be arranged.)

Pass/no pass option.

CCJ 200

Criminology and Criminal Justice (4)

An introduction and overview of the criminology and criminal justice major designed to provide 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.

*CCJ 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.

*CCJ 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.

CCJ 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.

CCJ 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.

***CCJ 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.

***CCJ 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.

***CCJ 299**

Special Studies (Credit to be arranged)

Pass/no pass option.

***CCJ 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.

CCJ 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.

CCJ 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.

CCJ 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.

CCJ 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.

CCJ 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.

CCJ 350

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.

***CCJ 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.

***CCJ 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.

CCJ 365

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.

CCJ 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.

CCJ 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.

***CCJ 399**

Special Studies (Credit to be arranged)

Pass/no pass option.

CCJ 401/501

Research (Credit to be arranged)

Consent of instructor.

CCJ 402/502

Independent Study (Credit to be arranged)

Consent of instructor.

CCJ 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.

CCJ 405/505

Reading and Conference (Credit to be arranged)

Consent of instructor.

CCJ 406/506

Projects (Credit to be arranged)

Consent of instructor.

CCJ 407/507

Seminar (Credit to be arranged)

Consent of instructor.

CCJ 408/508

Workshop (Credit to be arranged)

Consent of instructor.

CCJ 409

Practicum (Credit to be arranged)

Consent of instructor and senior status.

CCJ 410/510

Selected Topics (Credit to be arranged)

Pass/no pass option.

***CCJ 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.

CCJ 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.

CCJ 435**Crime, Grime, and Fear (4)**

Crime, grime, and fear is a course designed to study the social, economic, political, and physical factors underlying neighborhood crime and decline. Special attention is given to physical and social incivilities, the “broken windows” theory, police-community partnerships, and problem-solving. Students will work on neighborhood-centered projects to explore solutions to neighborhood crime patterns, disorder, and fear of crime, and ideas for strengthening police-citizen relations, and community building.

CCJ 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: CCJ 420.

CCJ 450/550*Comparative Perspective 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.

CCJ 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: CCJ 440.

CCJ 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.

CCJ 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.

CCJ 501/601**Research (Credit to be arranged.)****CCJ 502/602****Independent Study (Credit to be arranged.)****CCJ 503****Thesis (Credit to be arranged.)****CCJ 504/604****Internship (Credit to be arranged.)****CCJ 505/605****Reading and Conference (Credit to be arranged.)****CCJ 506/606****Projects (Credit to be arranged.)****CCJ 507/607****Seminar (Credit to be arranged.)****CCJ 508/608****Workshop (Credit to be arranged.)****CCJ 509/609****Graduate Practicum (Credit to be arranged.)****CCJ 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.

CCJ 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.

CCJ 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.

CCJ 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: CCJ 520/620.

CCJ 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: CCJ 515/615, CCJ 525/625, and CCJ 530/630.

CCJ 538*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.

CCJ 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.

CCJ 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.

CCJ 550*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.pdx.edu/hatfieldschool/political-science****B.A., B.S.****Minor in Law and Legal Studies
Secondary Education Program—Social
Science****M.A., M.S.****Ph.D.—Participating division in Public
Affairs 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.

The most current information about undergraduate degree programs, internships, and other opportunities is available on the program website (www.pdx.edu/hatfield-school/undergraduate-program-political-science).

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for Political Science's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

Admission requirements

Admission to the department is based on general admission to the University. See page 33 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.

There are four different options for students completing a degree in political science: the standard major, the public service track, the international development track, and the honors program. Each of these options are described below.

Major in Political Science. The standard 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:

Lower Division Requirements	Credits
Three courses from the following four options .. 12	
PS 101 U.S. Government or PS 102 U.S. Politics	
PS 204 Comparative Politics	
PS 205 International Politics	
PS 208 Introduction to Political Theory	
Upper Division Requirements	Credits
Five 400-level PS courses..... 20	
Additional PS electives (minimum 12 upper division)..... 16	
Total	48

Major with a Public Service option. The Public Service option in Political Science is designed for students who want a more hands-on experience in the major or are interested in practical politics. The curriculum provides students with a strong foundation in American government, while instilling in them an understanding of public service. Students in this track are required to serve an internship in a governmental or political office.

Lower Division Requirements	Credits
Three courses from the following four options .. 12	
PS 101 U.S. Government or PS 102 U.S. Politics	
PS 204 Comparative Politics	
PS 205 International Politics	
PS 208 Introduction to Political Theory	
Upper Division Requirements	Credits
PS 431 State and Local Politics..... 4	

PS 313 Fundamentals of Public Service	4
Additional PS and/or PA electives (minimum 8 PS credits)	20
Political Science options:	
PS 312 Legislative Process	
PS 331 Oregon Politics	
PS 417 Interest Groups	
PS 416 Political Parties and Elections	
PS 421 The Supreme Court and American Politics	
PS 424 Law, Politics, and Society	
PS 426 The Politics of the News	
Public Administration options:	
PA 311 Introduction to Civic Leadership	
PA 411 Foundations of Citizenship and Community Leadership	
PA 412 Civic Engagement: The Role of Governing Institutions	
PA 413 Civic Engagement: The Role of Individuals	
PA 414 Civic Engagement: The Role of Social Institutions	
PA 417 Ethical Leadership	
PA 420 Introduction to Nonprofit Management	
PA 425 Grantwriting for Nonprofit Organizations	
Field Experience	8
PS 404 Cooperative Education/Internship	
Total	48

Courses not required for the Public Service Option, but recommended for those interested in public service careers:

Leading Social Change Cluster	
CCJ 465 Leadership and Social Justice	
COMM 312 Media Literacy	
COMM 313 Communication in Groups	
EC 201 Principles of Economics	
EC 202 Principles of Economics	
EC 311 Micro Economic Theory	
EC 312 Macro Economic Theory	
UNST Capstone: Engaging Democracy	
USP 316 Fundamentals of Community Development	
USP 317 Introduction to International Community Development	
USP 386 Portland Past and Present	
USP 419 Population and Survey	
USP 428 Concepts of Community Development	

Major with an International Development option. International development involves questions of global governance, international and development economics, foreign aid and humanitarian assistance, poverty reduction and human development, sustainable development, and international and intergenerational justice.

Lower Division Requirements	Credits
Three courses from the following four options .. 12	
PS 101 U.S. Government or PS 102 U.S. Politics	
PS 204 Comparative Politics	
PS 205 International Politics	
PS 208 Introduction to Political Theory	
Upper Division Requirements	Credits
Three courses from the following four options .. 12	
PS 447 International Organization	
PS 448 International Law	
PS 449 International Environmental Law and Politics	
PS 454 International Political Economy	

Political Science electives	Credits
Five courses from the following options..... 20	
PS 352 Introduction to European Politics	
PS 353 Introduction to Latin American Politics	
PS 354 Introduction to Asian Politics	
PS 355 Introduction to African Politics	
PS 361 Introduction to the Politics of the Middle East	
PS 455 Politics of Economic Reform in Emerging Market Countries	

PS 460 Political Development in Modern Turkey	
PS 461 Politics of Economic Reform in Modern Turkey	
PS 466 Politics of China	
PS 471 Gender and Politics: A Comparative Perspective	
PS 474 Democracy and Development in Latin America	
PS 479 Transition to Democracy	
PS 483 Justice in the Modern World	

Non-Political Science electives	Credits
Three courses from the following options..... 12	
EC 340 International Economics	
EC 348 The Globalization Debate: Concept, History, and Theory	
EC 442 Multinational Enterprise	
EC 445 Comparative Economic Systems	
EC 447 Economics of Transition	
EC 450 Third World Economic Development	
EC 450 Economics of Development	
GEOG 331 Geography and Globalization	
GEOG 346 World Population and Food Supply	
INTL 395 Introduction to International Development Studies	
INTL 397 U.S. Policy and International Development	
INTL 490 Global Sustainable Development	
PHL 450 Ethics and International Justice	
SOC 320 Globalization	
SOC 420 Urbanization and Community	
SOC 441 Population and Society	
SOC 463 Global Inequalities and Health	
SOC 465 Environmental Sociology	
Research Project	4
PS 401 Research	
Total	60

Honors Program in Political Science.

The honors program is designed for our top students who seek out additional intellectual challenges, including research and writing an honors thesis during their senior year. It is distinct from the University Honors Program, but political science majors may be admitted to both programs.

Students apply for admission to the program during the winter or spring quarter of their junior year. To be eligible for the honors program, a student must be a political science major and have earned at least a 3.2 grade point average overall and a 3.5 GPA in their political science coursework. Applicants submit the following information to the Honors Program advisor: PSU and other college transcripts, letters of recommendation from two political science faculty, and a statement of purpose (500 words or less) indicating interest in the program, area of research for the honors thesis, and the faculty member willing to supervise the research.

Political science honors students complete all of the coursework required for the standard major, but honors coursework must include the following:

Credits	
PS 493 Philosophy of the Social Sciences	4
PS 495 Research Methods for Political Science ...	4
PS 403 Honors Thesis	12

Thesis credits are awarded in conjunction with thesis research and writing during the senior year, and students submit and defend their honors theses at the end of their senior

year. For political science students who are also enrolled in the University Honors Program, the process is designed to satisfy the thesis requirements of both programs.

Minor in Political Science. The minor in political science requires fewer credits than the standard major and may be combined with other majors offered at PSU. Of the 28 required course credits, students must complete at least 16 at PSU.

Lower Division Requirements	Credits
Two courses from the following four options.....	8
PS 101 U.S. Government or PS 102 U.S. Politics	
PS 204 Comparative Politics	
PS 205 International Politics	
PS 208 Introduction to Political Theory	
Upper Division Requirements	
Five courses (minimum 12 at 400-level)	20
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.

Minor in Law and Legal Studies. The minor in law and legal studies offers an interdisciplinary, liberal arts approach to the study of law. This is an academic program, not a professional training program, emphasizing the political, social, cultural, and philosophical foundations and impacts of law and legal systems. It is designed for pre-law students and also for a broad array of students from across the PSU campus who are interested in the relationship of law to politics, society, and culture. While the core courses concentrate on American law and the American legal system, the electives allow students to focus on aspects of law related to areas such as international law, comparative law, and philosophy.

Lower Division Requirements	Credits
PS 101 U.S. Government.....	4
PS 221 Introduction to Law and Legal Studies. 4	
Upper Division Requirements	
PS 421 Supreme Court and American Politics.....	4
Electives	16
Political Science options (minimum 8 credits)	
PS 325 Politics and the Legal Enforcement of Morals	
PS 422 Constitutional Law	
PS 423 Civil Liberties	
PS 424 Law, Politics, and Society	
PS 425 Women and the Law	
PS 428 Politics of Law and Order	
PS 448 International Law	
PS 449 International Environmental Politics and Law	
PS 483 Justice in the Modern World	
Non-Political Science options (maximum 8 credits)	

CCJ 310 American Courts	
CCJ 420 Criminal Law and Legal Reasoning	
PHL 311 Morality of Punishment	
PHL 333 Philosophy of Law	
HST 447 American Constitutional History I	
HST 448 American Constitutional History II	
HST 449 American Constitutional History III	
Electives approved by Law and Legal Studies advisor (maximum 8 credits)	
Total	28

For law and legal studies minors who are also majoring or minoring in political science, at least three electives (12 credits) must be applied solely to the law and legal studies minor. In order to count toward fulfillment of the minor, courses must be passed with a grade of C or above.

Graduate programs

The Division of Political Science offers programs leading to both a master of arts (M.A.) and a master of science (M.S.) degree. The master's program has a strong academic orientation. Through an immersion in political science scholarship, student are prepared for careers in the public or private sector that call for analytical acumen and clarity in written and oral communication. The Division also participates in the Public Affairs and Policy Ph.D. Program.

Admission requirements

The master's program generally attracts students with undergraduate degrees in political science, but is open to students with a wide variety of disciplinary backgrounds. The program admits graduate students during the fall and spring terms. Procedures and deadlines for applications are provided on the program website (www.pdx.edu/hatfield-school/graduate-program-in-political-science).

In addition to meeting the University's graduate admission requirements (see page 58), the Division requires applicants to submit the following:

- Political Science Graduate Admission Application
- One transcript (official or unofficial) from each college attended
- Official scores on the Graduate Record Examination (GRE) or Miller Analogy Test
- TOEFL scores (official or unofficial) if required by the University
- Two letters of recommendation from individuals who can evaluate the applicant's potential for success in the master's program
- Personal essay (about 500 words) describing academic and professional career goals, including the political science subfields of primary interest.
- Curriculum vitae or résumé (optional)

Degree requirements

Master's degree students concentrate their coursework in two of four fields of concentration in political science: American politics, international relations, comparative politics, political theory. Coursework also prepares students for their two comprehensive field examinations. Coursework is distributed as follows:

	Credits
PS 593 Philosophy of Social Science.....	4
Five courses in each of two fields of concentration	40
Minimum of two 500-level seminars	
Maximum of one approved non-political science course	
PS 595 Research Methods for Political Science (for the M.S. degree)	
PS 503 Thesis.....	6
Total	50

In order to count toward fulfillment of master's degree requirements, courses must be passed with a grade of B- or above. M.A. students must demonstrate proficiency in a foreign language. Those who have not had at least two years of college-level instruction in a foreign language must pass an examination in one foreign language, administered by the Department of World Languages and Literatures.

Field Examinations. Field exams are taken in both fields of concentration. Each tests the student's comprehension of that field, as encompassed by the student's coursework. The student's field advisors provide information about the format of the exam, the material it will cover, and the expectations for satisfactory performance. Students are encouraged to take their field exams toward the end of the term in which they will complete their coursework for the degree, or very soon thereafter (usually fall or winter term of the second year).

Thesis. The final requirement for the degree is the master's thesis—an original investigation that demonstrates mastery of a topic in political science and the ability to communicate this understanding to an audience of one's peers. The thesis topic is chosen in consultation with the student's thesis advisors. The thesis is defended in an oral presentation that lays out the purpose, implementation, and findings of the project, and makes a case for its contribution to political science scholarship.

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 103

State of the World (4)

The course surveys and analyzes the major global issues of our time, including human rights, environmental protection, poverty and underdevelopment, and war and peace. The importance of using interdisciplinary tools of analysis, and understanding the meaning of a global perspective on world affairs, are emphasized.

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 208

Introduction to Political 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.

PS 221

Introduction to Law and Legal Studies (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.

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 improving citizen engagement with electoral politics.

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 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.

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 335

Race and Politics in the United States (4)

Provides a general survey of constraints and opportunities in American racial minority politics against the backdrop of tremendous demographic change since 1965. Explores a series of debates in American politics with an eye toward the political implications of the changing demographic mix.

PS 343

Politics of War (4)

Introduction to the theory and practice of both inter-state war and civil conflict with particular attention to levels of analysis as well as the process and consequences of war.

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.

***PS 352**

Introduction to European Politics (4)

Introduction to the political systems and politics of countries in both western and eastern Europe. Includes analysis of institutions, policies, and political behavior, as well as an examination of the roles of culture and history. Both theory and case studies are presented, as is an analysis of European integration.

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 Asian Politics (4)

Introduction to the policies, institutions, and processes of the politics of Northeast and Southeast Asia.

***PS 355**

Introduction to African Politics (4)

Introduction to the policies, institutions, and processes of the politics of Sub-Saharan Africa.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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 421/521**The Supreme Court and American Politics (4)**

Uses selective case law in order to explore the place of the Supreme Court in America's constitutional structure and its interpretation of the relationship between the branches of federal government. Examines 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 process. Recommended prerequisite: PS 221.

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 221.

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 221.

PS 424/524**Law, Politics, and Society (4)**

Examines connection between law and the society which creates and enforces it. Law will be studied from bottom up rather than top down. Emphasis placed on what law is, how people use law, including whether access to law is equal, and how the state exercises power through law. Prerequisites: at least junior standing.

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.

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.

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.

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.

PS 435/535

Disasters and Public Policy (4)

The political, administrative, and public policy issues surrounding major and catastrophic risks and disasters including both natural (earthquakes, pandemics, asteroids) and man-made (climate change, nuclear weapons, bio-terrorism) events. PS 101, PS 102, or PS 200.

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.

PS 442/542

Contemporary Theories of World Politics (4)

Surveys concepts and arguments from various theoretical traditions in international relations. Topics are drawn from the ongoing debate between the realist and liberal schools of thought, as well as the challenges posed by radical, normative, and critical international relations theory. Theories will be examined mainly for their insights on issues of war and peace.

PS 444/544 U.S.

National Security Strategy: Regional Perspectives (4)

Focuses on the regional contexts that influence U.S. national security strategy and the multifaceted reasons security policies succeed or fail in each region of the world. Critical analysis applied to major social, cultural, political, economic, military, technological, and historical issues that shape formation of regional security strategy, and to strategic assessments of U.S. security policies as perceived from other regions' perspectives.

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.

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.

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 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 453/553

Power Transitions: Past, Present, and Future (4)

Uses power transition theory to examine what elements contribute to global war. Creates a foundation for understanding why nations fight, when they fight, the outcome of wars, and the relationship between global and regional conflicts. Also explores the continuum of peaceful interactions at the global level, and how and when the next series of upheavals will occur in the international system.

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.

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.

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.

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.

PS 466/566

Politics of China (4)

A survey of the historical, institutional, and social roots of contemporary politics in China as well as a consideration of several public policy areas.

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.

PS 471/571

Gender & Politics: A Comparative Perspective (4)

Examination of the role, progress, behavior, and power of women in politics using a comparative

lens. Topics include the representation of women in government, the problems confronting female candidates, the behavior of women officeholders, and the gender gap in politics. Examines women in western democracies, as well as in communist states and developing nations. Individual countries are used as case studies.

PS 473/573

Government and Politics of Arab North Africa (4)

Examines the domestic and international politics of Arab North Africa, including Morocco, the Moroccan/Western Sahara, Mauritania, Algeria, Tunisia, Libya, and Egypt. Topics include the history of the region, political regimes and authoritarianism, the Arab spring, women's rights, and U.S.-Maghrebi relations. Prerequisites: upper-division standing.

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.

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.

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.

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.

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 practical challenges and competing approaches to the practice of social science, especially political science. Subjects considered include the aims of social science, concepts and description, causality, rationality, macro and micro explanations, interpretation, and postmodernism.

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.

PS 503

Thesis (Credit to be arranged.)

Pass/no pass option.

PS 520

American Political Institutions (4)

Survey of field of American politics, with a particular focus on American political institutions. The course provides an introduction to the basic workings of key institutions in the U.S. political system, the major areas of research and theoretical debates surrounding each, and how political scientists practice their craft in this arena.

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

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

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.pdx.edu/hatfieldschool

Minor in Civic Leadership

M.P.A.

M.P.A.: Health Administration

M.P.H.: Health Management and Policy

E.M.P.A

Graduate Certificate in Nonprofit and Public Management

Ph.D.—Participating 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 upon 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 aca-

demic credentials and significant professional experience in government, nonprofit, 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. The Division is a candidate for accreditation with the Commission on Accreditation of Health Management Education for the MPA:HA and the MPH:HMP.

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 351 for details on the Doctor of Philosophy in public affairs and policy.

Undergraduate Programs Degree requirements

Civic Leadership Minor. The interdisciplinary Civic Leadership minor provides students with theoretical and practical understanding about civic leadership, and prepares students to be responsibly engaged citizens and community leaders. Students who minor in civic leadership must complete core and elective courses for a total of 34 credits (at least 20 of which must be taken in residence at PSU). Some of these courses have prerequisites, and students should read course descriptions in the current PSU Bulletin before registration. A pre-approved 6-credit community-based civic leadership practicum is required as part of the minor. The practicum requirement may be fulfilled

by a pre-approved capstone or by an independently developed community-based learning experience.

Required (12 credits total):

- PA 311 Introduction to Civic Engagement..... 4
- PA 312 Foundations of Community Leadership . 4
- PA 415 Civic Leadership Integrative Seminar..... 4

Civic Leadership electives (8 credits needed, choose two from below):

- PA 313 Fundamentals of Public Service
- PA 412 Civic Engagement: The Role of Governing Institutions
- PA 413 Civic Engagement: The Role of Individuals
- PA 414 Civic Engagement: The Role of Social Institutions
- PA 417 Ethical Leadership

Other electives

(8 credits needed, choose two from below):

- CCJ 455 Ethical Leadership in Criminal Justice
- COMM 313U Communication in Groups
- ELP 318 Educational Leadership in Public Schools
- ELP 350 Introduction to Leadership for Sustainability
- PA 399 (PA 314U) SPST: Students as Leaders
- PA 420 Introduction to Nonprofit Management
- PS 312 Legislative Process
- PS 318U Media, Opinion and Voting
- PS 325U Politics and the Legal Enforcement of Morals
- PS 417 Interest Groups
- PS 431 State and Local Politics
- USP 350 Concepts of Public Participation

Community-based practicum (6 credits total)

Degree Maps and Learning Outcomes

To view the degree map and expected learning outcomes for Public Administration's undergraduate minor, go to www.pdx.edu/undergraduate-programs.

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, and supplemented by personal letters, 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, 213 on computer or 80 on internet 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. All degrees offered by the Division of Public Administration require the submission of GRE scores. This does not apply to the Certificate; see #9 below.
7. In addition to the above, the MPH program requires completion of an undergraduate course in statistics for admission.
8. The EMPA admission requirements may be found at www.pdx.edu/cps/empa.
9. The Certificate in Nonprofit and Public Management admission requirements may be found at www.pdx.edu/hatfield-school.

The Division of Public Administration maintains the same application deadlines published for the University. Admission is open fall, winter, and spring terms.

Limitation on by-arrangement courses. Admitted master's students may utilize no more than 12 credits of by-arrangement classes (501 and 505). 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 from the Division of Public Administration.

Degree requirements

The Division of Public Administration offers a Master of Public Administration degree. Students admitted to this degree are required to complete 60 credits of coursework, 15 credits must be in a field of specialization; see below.

MASTER OF PUBLIC ADMINISTRATION

Substantive Core..... 30

- PA 511 Public Administration (3)
- PA 513 Administrative Ethics and Values (3) (Prerequisite PA 511)
- PA 533 Public Policy: Origins and Processes (3)
- PA 534 Administrative Law (3)
- PA 540 Administrative Theory and Behavior (3)

- (Prerequisite PA 511) 3
- PA 551 Analytic Methods in Public Administration I (3)
- PA 552 Analytic Methods in Public Administration II (3) (Prerequisite PA 551)
- PA 582 Public Budgeting (3)
- PA 585 Financial Management in the Public Sector (3) (or economics course approved by adviser)
- PA 590 Human Resources Management in the Public Sector (3) (Prerequisite PA 511)

Skill Development..... 9

- Three of the following
- PA 525 Grantwriting (3)
- PA 536 Strategic Planning (3)
- PA 545 Organization Development (3) (Prerequisite: PA 540)
- PA 548 Advocacy in the Public Sector (3)
- PA 549 Crosscultural Communications in the Public Sector (3)
- PA 555 Program Evaluation and Management (3)
- PA 556 Public Contract Management (3)
- PA 557 Operations Research in Public Management (3)

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).

Option 2 is for those students who have had at least three years of full-time administrative or management experience in public, nonprofit, and/or health care organizations. Option 2: PA 512 Case Analysis (6).

Field of Specialization 15

The MPA program offers fields of specialization in nonprofit management, natural resources policy and administration, local government, global leadership and management, and human resource management. Students declare an intended field of specialization upon admission, identify 5 courses (15 credits) to make up the field, and are required to complete a "field of specialization" form with a proposed program of study by the time they complete 30 credits of the MPA program. The field and program of study may be changed based upon consultation with the faculty advisor.

Students select skill development courses (9 credits) to complement their specialization. Requirements for each specialization are:

- Nonprofit management: Three required and two elective courses, as well as one substitution for a substantive core course.
- Natural resources policy and administration: One required and four elective courses.
- Local government: Two required and three elective courses.
- Global leadership and management: Two required and three elective courses.
- Human resource management: Two required and three elective courses.

On occasion, a student may create a unique field of specialization with advisor approval, which must be documented in the student's graduate file. Additional suggested preparation and/or courses in other academic units, as well as other professional experiences, may be recommended by faculty advisors.

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 MPA:HA degree.

Required Courses 39

- PA 511 Public Administration (3)
- PA 533 Public Policy: Origins and Processes (3)
- PA 534 Administrative Law (3) or PAH 577 Health Care Law and Regulation (3) (Prerequisites: PAH 571, 574)
- PA 551 Analytic Methods in Public Administration (3)
- PA 552 Analytic Methods in Public Administration II (3) (Prerequisite PA 551)
- PA 582 Public Budgeting (3)
- PA 590 Human Resources Management in the Public Sector (3) (Prerequisite PA 511) or PAH 580 Health Services Human Resources Management (3) (Prerequisite PAH 574)
- PAH 541 Organizational Behavior in Health Services Organizations (3) or PA 540 Administrative Theory and Behavior (3) or (Prerequisite PA 511)
- PAH 570 Health Administration (3)
- PAH 571 Health Policy (3) (Prerequisite PAH 574)
- PAH 573 Values and Ethics in Health (3) (Prerequisite: Completion of 30 credits of graduate program) or PA 513 Administrative Ethics and Values (3) (Prerequisite PA 511)
- PAH 574 Health Systems Organization (3)
- PAH 586 Introduction to Health Economics (3) (Prerequisite PAH 574)

Elective Courses 15

- PA 525 Grantwriting for Nonprofit Organizations (3)
- PA 545 Organization Development (3) (Prerequisite: PA 540)
- PA 549 Crosscultural Communication in the Public Sector
- PA 554 Policy Analysis Research
- PA 556 Public Contract Management
- PA 558 Managing Public Projects and Programs
- PA 562 Managing Employee Performance in the Public Sector
- PA 563 Sustainable Development Policy and Governance
- PAH 544 Leadership and Governance in Health Care (3) (Prerequisites: PAH 541, 571, 574)
- PAH 572 Health Politics (3) (Prerequisite: PAH 574)
- PAH 575 Advanced Health Policy (3) (Prerequisite: PAH 571)
- PAH 576 Strategic Management in Health Care Organizations (3) (Prerequisites: PAH 574, 541) or PA 536 Strategic Planning (3)
- PAH 578 Continual Improvement in Health Care (3) (Prerequisites: PAH 541, 574)
- PAH 579 Health Information Technology and Systems Management (3) (Prerequisite: PAH 574) or PA 550 Managing Information Systems
- PAH 587 Financial Management in Health Services (3) (Prerequisite: PAH 574)
- PAH 588 Program Evaluation and Management in Health Services (3) or PA 555 Program Evaluation and Management (3)

Substitutions of other skill development courses may be allowed with consent of adviser.

Field of specialization

MPA: HA students must complete at least 30 credits that are health care specific by graduation. Consult with your advisor to verify acceptability of any courses counted towards the specialization that do not have a PAH prefix.

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 PA 509, Organizational Experience (6) is intended for students who have had limited or no administrative experience, or those who wish

to complete an applied field experience. **Option 2** PA 512 Case Analysis (6) is for those students who have had at least three years of full-time administrative or management experience in public, nonprofit, and/or health care organizations. Advisor approval required.

Total _____ 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 and 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 and Science University.

Core courses 16

- PHE 535 Epidemiology Survey (3)
- PHPM 524 Introduction to Biostatistics (4)
- PHE 580 Concepts of Environmental Health (3) or PHPM 518 Concepts of Environmental Health
- PHE 512 Principles of Health Behavior (3)
- PAH 574 Health Systems Organization (3)

Health management and policy required concentration..... 39

- PAH 541 Organizational Behavior in Health Services Organizations (3)
- PAH 571 Health Policy (3) (Prerequisite PAH 574)
- PAH 573 Values and Ethics in Health (3) (Prerequisite: Completion of 30 credits of graduate program)
- PAH 576 Strategic Management of Health Care Organizations (3) (Prerequisites: PAH 574, 541)
- PAH 577 Health Care Law and Regulation (3) (Prerequisite: PAH 571, 574)
- PAH 586 Introduction to Health Economics (3) (Prerequisite PAH 574)
- PAH 587 Financial Management of Health Services (3) (Prerequisite: PAH 574)
- PAH 588 Program Evaluation and Management in Health Services (3)

Plus 15 credits from the following list:

- PA 525 Grantwriting for Nonprofit Organizations (3)
- PA 543 Creating Collaborative Communities (3)
- PA 545 Organization Development (3) (Prerequisite: PA 540)
- PA 549 Crosscultural Communication in the Public Sector (3)
- PA 553 Sustainable Development Policy and Governance (3)
- PA 554 Policy Analysis Research (3)
- PA 556 Public Contract Management (3)
- PA 558 Managing Public Projects and Programs (3)
- PAH 544 Leadership and Governance in Health (3) (Prerequisites: PAH 541, 571, 574)
- PAH 570 Health Administration (3)
- PAH 572 Health Politics (3) (Prerequisite: PAH 574)
- PAH 575 Advanced Health Policy (3) (Prerequisite: PAH 571)
- PAH 578 Continual Improvement in Health Care (3) (Prerequisites: PAH 541, 574)
- PAH 579 Health Information Technology and Systems Management (3) (Prerequisite: PAH 574)
- PAH 580 Health Services Human Resources Management (3) (Prerequisite PAH 574)
- PHE 520 Qualitative Research Design (3)
- PHE 541 Media Advocacy and Public Health (3)
- PHE 557 National Long-term Care Policy (3)

Other courses may be approved by the adviser.

Field work.....	6
PA 509 Organizational Experience (6)	
Total	61

EXECUTIVE MASTER OF PUBLIC ADMINISTRATION

The Executive MPA offers a work-centered curriculum that is designed to reflect the way problems realistically present themselves in the workplace. Courses are organized and planned with deliberate sequencing to maximize learning that carries over from one course to another. Students admitted to this degree have at least 10 years of experience and are required to complete 45 credits of coursework in a cohort model.

Core courses	39
PA 513 Administrative Ethics and Values (3)	
PA 517 Leadership Development in the Public Sector (3)	
PA 518 Leading Public Organizations (3)	
PA 533 Public Policy: Origins and Process (3)	
PA 534 Administrative Law (3)	
PA 539 National Policy Process Seminar (3)	
PA 540 Administrative Theory and Behavior (3)	
PA 545 Organizational Development (3)	
PA 552 Analytic Methods in Public Administration II (3)	
PA 583 Advanced Budgeting Concepts and Techniques (3)	
PA 590 Human Resource Management (3)	
PA 510 International field experience (3)	
PA 510 Special topics course (determined based on cohort members' interests and opportunities.)	

Capstone Requirement.....	6
Students will register for the following two courses to complete their capstone, a culminating project intended to demonstrate mastery of the core skills taught in the program as applied to a real-life problem of public management:	
PA 512 Reflective Practice and Case Analysis (6)	
Total	45

GRADUATE CERTIFICATE IN NONPROFIT AND PUBLIC MANAGEMENT

The Graduate Certificate in Nonprofit and Public Management consists of 21 credit hours of graduate course work in Public Administration with an emphasis in either public or nonprofit management. The certificate is intended to provide existing and aspiring middle managers in nonprofit and public organizations with the knowledge and skills necessary to be successful in carrying out their administrative responsibilities.

Required courses.....	6
PA 511 Public Administration (3)	
PA 540 Administrative Theory and Behavior (3)	

Elective courses.....	15
Students must take five courses, and should meet with an advisor to plan a suitable complement of courses to meet their individual interests and professional development needs. Substitutions may be made with the permission of the academic advisor. Courses may be drawn from any of six content/skill areas.	

General Management

PA 513 Administrative Ethics and Values (3)
PA 520 Introduction to Nonprofit Management (3)
PA 522 Governance of Nonprofit Organizations (3)
PA 536 Strategic Planning (3)

Finance and Budgeting

PA 524 Financial Management in Nonprofit Organizations (3)
PA 525 Grantwriting for Nonprofit Organizations (3)
PA 526 Fundamentals of Fundraising in Nonprofit Organizations (3)
PA 582 Public Budgeting (3)
PA 583 Advanced Budgeting Concepts and Techniques (3)
PA 585 Financial Management in the Public Sector (3)
Leadership and Human Resource Management
PA 570 Environmental and Natural Resource Leadership (3)
PA 517 Leadership Development in Public Organizations (3)
PA 528 Organizational Leadership and Decision-Making in Nonprofit Organizations (3)
PA 590 Human Resource Management in the Public Sector (3)
PA 592 Volunteerism and Volunteer Management (3)
PA 594 Enhancing Diversity in the Workplace (3)
PA 598 Values Based Management (3)
Community Building and Communication
PA 541 Social Entrepreneurship (3)
PA 527 New/Emerging Nonprofits: Development and Management (3)
PA 543 Creating Collaborative Communities (3)
PA 545 Organizational Development (3)
PA 549 Crosscultural Communications in the Public Sector (3)
Public and Nonprofit Sector
PA 520 Introduction to Nonprofit Management (3)
PA 521 History and Foundations of the Nonprofit Sector (3)
PA 522 Governance of Nonprofit Organizations (3)
PA 524 Financial Management in Nonprofit Organizations (3)
PA 533 Public Policy: Origins and Processes (3)
PA 534 Administrative Law (3)
Specific Management Skills
PA 538 Advocacy and Political Participation by Nonprofit Organizations (3)
PA 550 Managing Information Resources (3)
PA 555 Program Evaluation and Management (3)
PA 558 Managing Public Projects and Programs (3)

Doctor in Philosophy in public affairs 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 affairs and policy. For details, see the program description on page 351.

Courses

Courses with an asterisk () are not offered every year.*

PA 311

Introduction to Civic Engagement (4)

This course examines the concept of civic engagement by exploring how relationships are strengthened and communication is nurtured among members of society, and how this contributes to a civic identity that promotes socially conscious thought and action. The course will examine the values, skills and actions that contribute to a sense of civic identity through assigned readings, lectures, discussions, group activities, and self-reflection. A central goal of this course is to help students prepare for a lifetime of responsible citizen-

ship and civic engagement. This course includes a community-based learning project.

PA 312

Foundations Community Leadership (4)

This course explores the role of community leadership in advancing civic engagement, civil society, civic capacity, community-building, reasoned debate and other key civic virtues in democratic societies. Students will integrate leadership theory with practical observations in the context of the United States' socio-political history and the role of civic engagement in our evolving social system. The course builds a definition for community leadership that recognizes the close interface between the role of public servants as agents of policy implementation and the role of citizens as active stewards of the public good.

PA 313

Fundamentals of Public Service (4)

Exploration of how public service informs the roles of public/nonprofit organizations in social change. Introduction to conceptual public service frameworks and exploration of the historical dimensions, underlying values and external forces that shape contemporary public service. Ways for community members to influence public policy through civic engagement are addressed.

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. Prerequisites: PA 311 or 312.

PA 413

Civic Engagement: The Role of Individuals (4)

This course provides an overview of the role of the individual in civic engagement processes. Students will develop an understanding of the variety and forms of engagement processes in which individuals participate within local and national governments and public organizations. The course focuses on developing students' ability to critically analyze a variety of civic engagement processes and understand the consequences, limitations, opportunities, and benefits of these various processes. Students will examine whether individuals have equal opportunities to engage in political and social decision-making structures, and how they serve as change agents to address social injustice. Prerequisites: PA 311, 312 or 313.

PA 414

Civic Engagement: The Role of Social Institutions (4)

Develops an understanding of the roles that social institutions (voluntary associations, public interest groups, educational and religious institutions, and nonprofit organizations) play within democratic societies. Additionally, the course investigates the literature on social institutions and social capital, including their historical development, modern forms, social functions, and ways in which they shape individuals' participation in governing processes. Students will examine the relationships among socially sustainable communities, strong social institutions and private interests by analyzing the mechanisms that generate participation and deliberation. Prerequisites: PA 311 or 312.

PA 415**Civic Leadership Integrative Seminar (4)**

This seminar is devoted to exploring, investigating, discussing, understanding, and synthesizing the theoretical understandings and practical applications of civic leadership. Students will have an opportunity to reflect upon, synthesize, and showcase their knowledge through development of a portfolio that demonstrates their learning about civic leadership. Prerequisites: One of PA 311, 312 or 313, plus one of PA 412, 413 or 414.

PA 417**Ethical Leadership (4)**

Explores potential ethical conflicts faced by leaders in public and community service. The course will provide students with ethical leadership models that will help them to judge the ethical compromises that may put personal, professional, organizational, and public service values in conflict with one another. Coursework will include a review of the theoretical concepts that underpin ethical leadership and will explore their practical application through case studies and the experiences of elected and career public officials who have faced ethical dilemmas in public and community service. Prerequisites: PA 312 or 313.

PA 420**Introduction to Nonprofit Management (4)**

Introduction to the importance of the nonprofit sector in contemporary society and examination of the sector's contribution to the social, political, and economic economy. Emphasis on practical application of nonprofit management theory and helping students gain the knowledge and skills appropriate to taking on nonprofit leadership roles. Prerequisites: at least junior standing.

PA 425**Grantwriting for Nonprofit Organizations (4)**

Students will acquire necessary skills to write successful grant proposals for foundations and other private funders. Students will learn how to: develop a project idea, plan a project or program, cultivate and work with prospective funders, develop and write a proposal, and generally learn skills to strengthen the grant-seeking process. Prerequisites: at least junior standing.

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. Requirements also include a reflective paper and a public presentation. 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**Case Analysis (6)**

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 healthcare 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. Prerequisite: PA 511.

PA 514**Global Leadership and Management (3)**

Contemporary global realities require emerging public sector leaders to prepare themselves by learning adaptable leadership and management concepts and tools. This core course is designed to equip interested students, both from the U.S. and abroad, with professional skills and practical knowledge that will help them "to lead and manage responsibly" in a range of global settings.

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 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**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 523**Nongovernmental Organizations: Nonprofits on the World Stage (3)**

Introduction to the history and development of Nongovernmental Organizations (NGOs) and the roles they play on the world stage. Examines the causes of the growth and significant role of NGOs in creating civil society, as well as the roles of NGOs in fighting oppression, safeguarding the environment, building and training workforces and advocating major societal changes.

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 527**New/Emerging Nonprofits: Development and Management (3)**

Intended to develop knowledgeable leaders for the nonprofit sector that understand how to establish and manage newly emerging organizations. Examines a wide range of management and leadership needs, problems and issues that arise for an organization in its early years. Explores how an organization develops and emerges and how the traditional tasks of management: supervision, planning, budgeting, fundraising and marketing can be most effectively administered. Recommended prerequisites: PA 520 or PA 521.

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, transforma-

tional, 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 in the types of nongovernmental nonprofit organizations the students visit, based in part on the interests of the students who register. On-site translation is provided so that proficiency in Spanish is not necessary, but Spanish language study is part of the immersion experience.

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 all stages of the public policy process. The course considers the interactions among the branches and levels of government, interest groups, nonprofit organizations, and the private sector. Tensions among various forces that affect the development and implementation of policy approaches are considered throughout the course.

PA 534**Administrative Law (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**Regulation: Policy and Practice (3)**

Regulatory policy is used in a wide range of contexts, from the environment to health care to financial management and more. This course focuses on the development and implementation of regulatory policies at all levels of government. It considers foundation concepts and processes from the constitutional basis for regulation to implementation through promulgation of administrative regulations to enforcement of regulatory policies. It also deals with the relationships among regulatory policy, administrative law, and politics.

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 537**Law and Public Policy (3)**

Law and courts are critical to public policy. The policy process often starts with cases for which no formal policy exists. The seminar examines judges

as policymakers and the operation the policy process when courts are involved. It considers critical issues in judicial policymaking, examines fields where courts have played important policy roles, contemplates difficulties faced by judges, and helps students develop techniques to analyze judicial policymaking.

PA 538**Advocacy and Political Participation by Nonprofit Organizations (3)**

Exploration of the role of citizen advocacy and political participation in the United States in the twenty-first century. Investigates the many meanings of the term "civil society," as well as the role of nonprofit and voluntary organizations in lobbying and advocacy, and the role of citizen movements in shaping local, national and global democracy. Will discuss and analyze specific advocacy campaigns with a focus on strategy.

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. Prerequisite: PA 511.

PA 541**Social Entrepreneurship (3)**

This course provides students with core theories and concepts of social entrepreneurship, and contemporary approaches to entrepreneurship for the public and nonprofit sector. It analyzes successful cases of social entrepreneurship and develops competencies to create organizations that generate revenues while serving a social mission. Students learn about setting up and managing social entrepreneurial ventures, focusing on the resources, impact and support structures for social entrepreneurs. Students are given the opportunity to develop their own social entrepreneurial design.

PA 542**Sustainable Development Implementation (3)**

Focuses on the challenges involved in attempting to turn international commitments and policy promises into action. Using examples from around the U.S. and around the world, we examine sustainable development policy implementation and operation in an effort to see what worked, what did not, and how implementation challenges can be addressed.

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 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 development of appropriate interpersonal competencies and skills. Focuses on the public manager as change agent. Prerequisite: PA 540.

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 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 553**Sustainable Development Policy and Governance (3)**

Foundation in sustainability-related policy design, policy analysis and governance approaches at multiple jurisdictional levels and in different cultural and social contexts. Explores challenges and opportunities related to developing policies and governance models that address the complex social, economic and environmental aspects of sustainability. Examines the role systems thinking plays in policy development and analysis in order to achieve integration across scales and sectors. Relevant topical issues serve as the focus for exploring how policy development and governance develops on the ground.

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 556**Public Contract Management (3)**

Explores what happens when public sector organizations form working relationships with other agencies, communities, nonprofit organizations, or for-profit firms through contracts. It seeks to understand key elements of the formation, operation, and termination (or transformation) of these relationships and to do so from the perspective of the generalist manager rather than from a narrow technical view. The purpose here is not to debate whether government at all levels should do more contracting or less but to assess what happens when the decision is made to use contractual arrangements to perform services or provides materials.

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 replace-

ment analysis. Methods taught in the course will be in the context of public administration.

PA 558**Managing Public Projects and Programs (3)**

Introduction to management concepts and tools required for the design, implementation and sustainability of public sector (government and non-governmental organizations) programs and projects. Draws on contemporary literature and case studies. Students apply their management learnings from this course to a real-life program or project. Expected preparation: PA 511 or PA 533 or PA 540.

PA 560**Local Government Administration (3)**

This course introduces public administration practice at the local government level. It addresses those factors that make local government administration unique, but informed by the fact that contemporary local government professionals are closely connected to a wide range of intergovernmental and often cross-sectoral working relationships. Local government administration learn that leadership within the organization, engagement with the community, and work across organizational and jurisdictional boundaries.

PA 561**Intergovernmental Relations (3)**

This course addresses the complex web of intergovernmental relations that is essential to the successful operation of public administration and policy throughout the nation. At the core of these relationships is a set of concerns about the political, legal, fiscal, and organizational relationships across governments and sectors. This course provides an in-depth examination of the foundations and challenges of these relationships.

PA 562**Managing Employee Performance in the Public Sector (3)**

Managing human capital can be a challenging endeavor and doing so in the public sector, particularly in government, introduces the added burden of politics. Explores the multifaceted nature of performance in the workplace including the political, legal, economical and managerial issues that often accompany addressing employee performance in the public sector (government and nonprofit). The goal is to manage and improve human resources while holding individual employees and public agencies account for organizational performance. Prerequisites: PA 590.

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**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 Resources 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 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 international 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
Environmental and Natural Resource
Leadership (3)**

Skills, styles and attributes of those who lead natural resource and environmental organizations will be examined to enhance the leadership abilities of those in the class. Each class member will analyze presentations by current leaders, prepare a leadership prescription for an organization with which they are familiar, and design a leadership learning program. The course is intended for all those concerned with leadership in natural resource and environmental organizations, regardless of background. Considerable time will be devoted to exchange of information among those in the class.

**PA 581
Advanced Fundraising (3)**

Focuses on the understandings, processes, and skills that are necessary for successful major gift development. Addresses the process of developing advanced fundraising techniques, beginning with the formulation of the development plan, moving through developing a gift management system, and concluding with application and design of effective gift stewardship. The steps in the process are identified in general terms with specific application applied to the context of student experience or projects. Also covers the role of leadership especially volunteer leadership, and the relationship of that leadership with other human resources such as the Development Officer or the Chief Executive Officer. Expected preparation: PA 526.

**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 pre-

sentation, 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 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. Prerequisite: PA 511.

**PA 591
Employment Law and Policy (3)**

This course delves into the legal environment and the range of laws that are associated with the employment process from recruiting through termination or retirement and its overall policy impact on the practice of human resource management (HRM). Such areas entail federal, state and local legislation as well as ordinances, statutes and Executive Orders that govern equal employment opportunity and the legal framework within which human resource management must operate. Also considered are the constitutionality of employment laws and how constitutional law is applied to certain groups that may render private sector employees somewhat distinct in some ways from those in the public sector, in this case, government or state actors (e.g., those who work on

behalf of the government). This course is heavily focused on case law, case analyses and the impact of various court decisions over time on policy interpretations, HRM practices and charting the employment through termination processes. Expected preparation: PA 511 and 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

Civil Rights for Public Managers (3)

Public service professionals deal with a variety of civil rights issues on a regular basis. They manage a diverse workforce with civil rights considerations central to effective human resource management. That diverse workforce serves increasingly diverse communities. Civil rights include race and ethnicity, but other issues and groups as well. This course considers the major issues of civil rights from a public law perspective with a concern for the challenges facing public managers.

PA 594

Enhancing Diversity in the Workplace (3)

To examine the effects of diversity across organizations with particular emphasis on those within the public sector. Three aspects of diversity initiatives will be employed: valuing, enabling and managing diversity. A wide range of cultural and social diversity issues, to include but not limited to race, gender, age, nationality, class, language, sexual orientation and disability, will be discussed. Theories and practical tools will be explored and students will be given the opportunity to work on diversity issues by way of discussions, case studies and field assessments.

PA 595

Public Sector Labor Relations (3)

The history and development of public sector labor relations in the United States. This course explores the impact of labor organizations on government activities and the role of public sector managers in responding to unions. The course provides both a historical context for labor relations and a set of precepts for working with labor organizations in public administration. From hospitals, to school districts, regional government, cities, counties, state agencies and even some large nonprofits, this course explores the importance of developing and maintaining a constructive working relationship with the labor organizations that represent the employees of those organizations.

PA 598

Values-based Management (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.)

PAH 320

Health Ethics: Contemporary Issues (4)

Explores the theoretical, historical, and institutional contexts of health ethics across populations. Students will learn and apply practical skills to deconstruct and analyze ethical challenges across a continuum of health-related topics from the classical cases through contemporary debates regarding our global social health, social justice, and related issues.

PAH 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. Recommended corequisite: PAH 574.

PAH 542

Marketing in Health Services Organizations (3)

This course provides students with concrete tools and knowledge about marketing concepts and processes in health services and develops competencies for application of marketing principles for a range of health services organizations. Concepts of messaging are also addressed as a component of the marketing strategy.

PAH 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. Prerequisites: PAH 541, 571, 574.

PAH 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.

PAH 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. Prerequisites: PAH 574.

PAH 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. Recommended corequisite: PAH 574.

PAH 573

Values and Ethics in Health (3)

This course addresses issues and questions regarding values and ethics in health, with particular attention to public health practice and health policy and management. It provides students with opportunities to consider issues in health and social services that challenge values and pose ethical issues, and assists students in addressing these issues in the context of both personal and organizational values and beliefs. Specific course content includes, but is not limited to, ethical issues such as reproductive issues, emerging diseases, product liability, pharmaceutical controls, advertising, occupational and environmental issues, and research dilemmas. Prerequisites: Completion of at least 30 credits of the graduate program.

PAH 574

Health Systems Organization (3)

This course introduces basic concepts and issues in the organization, financing, and delivery of health services. The emphasis is on the systemic aspects of health services production and delivery which address the health needs of populations with respect to death, disease, disability, discomfort, and dissatisfaction. Students will examine the inter-relationships of system structures, subsystems, and processes, as well as their interactions with the larger social, cultural, economic and political environments in which they exist. The focus is on the United States, with international comparisons used to illustrate similarities and differences.

PAH 575

Advanced Health Policy (3)

Provides students focusing on health policy analysis or advocacy the opportunity to explore specific areas of health policy in-depth. 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. Prerequisites: PAH 571.

PAH 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. Prerequisites PAH 541, 574.

PAH 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: PAH 571, 574.

PAH 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. Prerequisites PAH 541, 574.

PAH 579

Health Information Technology and Systems Management (3)
Advances in information technology are driving fundamental changes throughout health care and transforming the health care industry. Students will gain an understanding how to manage and use health information technology systems. The course will identify the various types of health care information systems, and assess the key issues confronting the management of such systems, including business needs, the relationship between organizational needs and technology capabilities, and the management and control of IT resources in a variety of health-related organizational settings. Prerequisites: PAH 574.

PAH 580

Health Services Human Resources Management (3)
Overview of human resources within the context of health care organizations. Focus on the practical application of human resources management principles in the work setting through discussion of situations common in health care environments. Elements of the situation evaluated from the health care employee and health care manager perspectives. Examples of techniques, forms, and tools will be discussed. Prerequisites: PAH 574.

PAH 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. Prerequisites: PAH 574.

PAH 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: PAH 574.

PAH 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.

PAH 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: PHPM 525, PHE 535.

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:

- National Evaluation of Safe Start Promising Approaches.
- Project Safe Neighborhoods Gun Violence Reduction.
- Portland and Gresham Weed & Seed Efforts.
- Evaluation of Oregon Law Enforcement Traffic Stops.
- Public Perceptions of Oregon Law Enforcement.
- Elder Abuse.
- Risk Assessment in Portland Police Bureau's Domestic Violence Reduction Unit.
- Community Prosecution in Clackamas County.
- Tactical Ethics – Perspectives on Profiling Training.

Center for Public Service

650 Urban Center
503-725-8261/8168
www.pdx.edu/cps

The Center for Public Service, which now houses the Executive Leadership Institute (ELI) and the Institute for Nonprofit Management (INPM), draws on the extensive expertise of faculty and students within the Public Administration, Political Science, and Criminology and Criminal Justice divisions of PSU's Mark O. Hatfield School of Government. The Center's broad mandate is to connect PSU's research capabilities and public service mission with real-world challenges in the public and nonprofit sectors, while forging productive and sustainable relationships with leaders at the local, state, federal, and international levels.

Through its leadership program area the Center offers a wide range of education, specialized training, and research programs that serve elected officials and public and nonprofit sector leaders throughout the Oregon/SW Washington area, as well as in international venues such as Vietnam, Japan, and China. These offerings include an Executive MPA degree for experienced practitioners; a Certificate of Nonprofit and Public Management; custom-designed leadership development programs; and applied research and technical assistance across a wide range of fields including workforce diversity, change management, and organizational performance.

Through its nonprofit program area the Center focuses on research and high quality, accessible, and relevant education in nonprofit management, leadership, governance, and philanthropy. Programs include seminars, workshops, conferences, and community forums designed to link theory and practice for practitioners in the philanthropic and nonprofit sectors.

Institute for Tribal Government

570-J 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.

Center for Turkish Studies

650 Urban Center
503-725-8309
www.pdx.edu/turkish_studies_center/

The Center for Turkish Studies operates out of the Mark O. Hatfield School of Government and the Office of International Affairs at Portland State University. The

Center's faculty covers diverse academic disciplines and come from institutions in North America, Europe, Turkey, and North Cyprus. The center promotes academic research and exchange programs between PSU and Turkish universities as its primary objective. It also engages in private and public sector outreach activities on topics pertaining to contemporary Turkish affairs, the Turkic world, and the peace process in Cyprus and the Eastern Mediterranean. It sponsors and coordinates international conferences, promotes business relationships, and provides consulting on strategic, technical, economic, and political issues to national and international institutions and firms.

National Policy Consensus Center

720 Urban Center
503-725-9077
www.policysensus.org

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, pri-

vate, and civic sectors to work together. The center hosts an extensive network of university centers called the University Network for Collaborative Governance; sponsored joint projects between states and partner organizations; supplies information, consultation, and technical assistance; and offers training and education in collaborative governance.

The National Policy Consensus Center also includes Oregon Solutions and Oregon Consensus.

Oregon Solutions is a statewide program supporting Oregon's Sustainable Community Objectives. Oregon Solutions works with communities to integrate public, private and civic resources in local sustainability efforts. Oregon Solutions promotes a unique "community governance system", that uses the University's unique role as a 'neutral forum', helping communities collaborate with diverse partners to implement projects. For more information, contact: ktravis@pdx.edu; (503) 725-9092; www.orsolutions.org.

Oregon Consensus provides a neutral forum and professional expertise to support collaborative policy development, conflict resolution and community consensus building by public agencies and stakeholders statewide. For more information, contact: consensus@pdx.edu; (503) 725-9070; www.orconsensus.pdx.edu.

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
Development

Graduate Certificate in Real Estate
Development

Graduate Certificate in Transportation
Graduate Certificate in Urban Design
MRED—Master of Real Estate
Development

M.U.R.P. – Master of Urban and Regional
Planning

M.U.S. – Master of Urban Studies

Ph.D. – Urban Studies, Urban Studies:

Regional Science

The Toulan School of Urban Studies and Planning provides an interdisciplinary approach to understanding urban places. 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.

Undergraduates can major in community development or complement their bachelor's degree in another field by concurrently meeting the curricular requirements for a minor in community development, real estate development or sustainable urban development. Students interested in developing professional planning skills may pursue a Master of Urban

and Regional Planning. The M.U.R.P. degree is fully accredited by the Planning Accreditation Board. 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 or academic field.

Degree Maps and Learning Outcomes

To view the degree maps and expected learning outcomes for School of Urban Studies and Planning's undergraduate degrees, go to www.pdx.edu/undergraduate-programs.

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. Information regarding application criteria, procedures, and deadlines can be found either on the Web site for the Toulan School or by contacting the school office directly.

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 School.

COMMUNITY DEVELOPMENT (B.A./B.S.)

OVERVIEW

The Portland area is an exciting place to enroll in our undergraduate major in community development. We understand community development as a process in which people act together to promote the social, economic, political, and physical well being of their community. Students graduating with a degree in community development will be citizen activists, empowered to take leadership roles in public affairs.

Community-based participation in all aspects of government planning and administration is an established part of the political culture of our region. Neighborhood associations are actively involved in land use, housing, and transportation issues. The City of Portland has been practicing community-oriented policing for several years. Public schools are establishing community-based management councils and involving local business firms in curricular design. Community development corporations are growing rapidly in the range and sophistica-

tion of their activities. New community-oriented financial institutions and public-private partnerships are emerging to build and maintain affordable housing and to create jobs. We anticipate continued growth in these kinds of activities in the years ahead.

Community Development majors often find careers in not-for-profit organizations, private consulting firms, advocacy groups, and local, regional and state governments. Locally, a graduate may find a career with the City of Portland, Portland Bureau of Housing and Community Development, METRO, or any of Portland's community development corporations. Community development practitioners work on a range of issues including housing, community organizing, transportation, the environment, and economic development.

For more information about careers in Community Development please see Portland State's Career Center's What Can I do with a Major in Community Development: <http://www.pdx.edu/careers/majorcommunitydevelopment.html>.

COMMUNITY DEVELOPMENT LEARNING OBJECTIVES

Graduates should be prepared for professional practice wherein they will:

1. **Think critically** using appropriate theoretical perspectives about community and community building; apply theoretical frameworks to analyze the elements of a community and understand the various forces working on it; differentiate evaluation from judgment; and evaluate their own perspectives.
2. **Understand the importance of place:** appreciate the sense of place that exists in all communities; observe the ways in which the natural and built environment of a community affects its social structures; and observe the ways in which locality is important to personal identity in a given community.
3. **Uphold the values of democratic decision-making and participatory planning:** enable people in the community to identify their assets and define their needs; include the public in defining the public good; and encourage self-governance.
4. **Commit to civic engagement and civic responsibility:** be informed about local issues; act from a motivation to give back to the community; step readily into the community organizer's role; and be entrepreneurial in support of the development of communities.
5. **Build human capital:** help to build community leadership; impact the development of others in a positive way; build community consensus; and facilitate communication to support community solidarity.

6. **Act to promote social justice:** recognize and appreciate social, cultural, and economic diversity; work against discrimination based on facts such as social class and race; work to empower the disenfranchised; and commit to inclusionary practice.

7. **Understand the importance of maintaining an international perspective and awareness in Community**

Development: appreciate the diverse needs and perceptions of the global community, especially the Developing World; observe the ways in which actions in the developed world impact the Developing World; appreciate the unique assets of local global communities; appreciate the ways in which locality is important to community and personal identity; understand similarities and differences between domestic and international community development.

CURRICULUM

Community-based participation in all aspects of government planning and administration is an established part of the political culture of our region and an important element of a sustainable future.

Neighborhood associations are actively involved in land use, housing, and transportation issues. The City of Portland has been practicing community-oriented policing for several years. Public schools are establishing community-based management councils and involving local business firms in curricular design. Community development corporations are growing rapidly in the range and sophistication of their activities. New community-oriented financial institutions and public-private partnerships are emerging to build and maintain affordable housing and to create jobs. We anticipate continued growth in these kinds of activities in the years ahead.

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.

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.

Required Core Curriculum (46 credits)

Community Development Core (12 credits). The Community Development pro-

gram begins with three core courses that introduce students to the social, political, cultural and economic aspects of urban life and to the theory and practice of community development.

- USP 300 Introduction to Urban Studies (4cr)
- USP 301 Introduction to Community Development (4 cr)
- USP 302 Theory and Philosophy of Community Development
- [Prerequisite: USP 301; or, by permission of instructor] (4 cr)

Areas of Community Development (12 credits). Students will then move on to three courses that introduce major themes in community development. Students are strongly encouraged to complete USP 300 and USP 301 before taking any of the following classes.

- USP 312U Urban Housing and Development (4 cr)
- USP 313U Urban Environmental Issues (4 cr)
- USP 315 Community Organizing and Social Change (4 cr)

Methods in Community Development (16 credits). Students are required to enroll in the following 4 methods courses. These courses are designed to provide students with a basic set of skills and tools they will need to perform community development work in the real world. Students should complete the Community Development Core (USP 300/301/302) before enrolling in the methods courses.

- USP 350U Inclusive Engagement (4 cr)
- USP 430 Participatory Research Methods for Community Development (4 cr)
- USP 440 Measuring People and Communities in the Urban Context (4 cr)
- USP 450 GIS for Community Development (4 cr)

Practice in Community Development (6 credits). An essential part of the major is gaining experience in the practice of community development. Students can fulfill this 6 credit requirement by: (1) enrolling in a Community Development Field Seminar; (2) organizing an Internship that is approved by their faculty advisor; (3) organizing a practicum with other students and a faculty advisor; or, (4) enroll in field seminar or practice-oriented class in another department that is approved by the Undergraduate Executive Committee. Students are encouraged to take at least one course from Methods in Community Development before enrolling in USP 403 or starting an internship.

- USP 403 Community Development Field Seminar (6 cr)
- Internship option (6 cr)

Elective Pathways (12 credits). Students must take 12 credits of electives (8 of which must be from USP courses). It is recommended that students organize their elective courses around areas of community development they are interested in pursuing further—what we refer to as a “pathway.” Pathways are self-designed in coordination with faculty advisors.

USP Elective Courses:

- USP 311U Introduction to Urban Planning (4 cr)
- USP 314 The City in Film (4 cr) (Offered every other year)
- USP 317U Introduction to International Community Development (4 cr)
- USP 324U Healthy Communities (4 cr)
- USP 325U Community and the Built Environment (4 cr)
- USP 326U Neighborhood Conservation and Change (4 cr)
- USP/FIN 360 Real Estate Finance I (3 cr)
- USP 385U History of American Cities (4 cr)
- USP 386U Portland Past and Present (4 cr)
- USP 419 Population and Society (4 cr)
- USP 423 Real Estate Development (4 cr)
- USP 427 Downtown Revitalization (3 cr)
- USP 429 Poverty in the Urban Community (3 cr)
- USP 445 Cities and Third World Development (3 cr)
- USP 451 Community Economic Development (3 cr)
- USP 455 Land Use: Legal Aspects (3 cr)
- USP 456 Urban Transportation: Problems and Policies (3 cr)
- USP 457 Information Cities (3 cr) (Offered every other year)
- USP 468 Oregon Land Use Law (3 cr)
- USP 480 Political Economy of Nonprofit Organizations (3 cr)
- USP 490 Green Economics and Sustainable Development (3 cr)

CUPA Elective Courses:

- PS 319 Politics of the Environment
- PS 331 Oregon Politics
- PS 428 Politics of Law and Order
- PS 431 State and Local Politics
- PA 311 Introduction to Civic Engagement (4 cr)
- PA 312 Foundations of Community Leadership (4 cr)
- PA 313 Foundations of Public Service (4 cr)
- PA 412 Civic Engagement: The Role of Governing Institutions (4 cr)
- PA 413 Civic Engagement: The Role of Individuals (4 cr)
- PA 414 Civic Engagement: The Role of Social Institutions (4 cr)
- PA 417 Ethical Leadership (4 cr)

Advising. Students who have already completed coursework in the major before Fall 2013 should meet with the Community Development Student Advisor to ensure a smooth transition to the new requirements.

Admission requirements

Students may take courses in the major before formal admission. Students must have a GPA of 2.75 or higher in order to be admitted to the Community Development major. No application is required.

Forms. To declare your major with University Admissions, use the Student Information Change Form available from the Admissions Office in Neuberger Hall or online at http://www.pdx.edu/medialst/student_info_change.pdf. This form should be returned to Admissions Office in Neuberger Hall.

Requirements for minor To earn a minor in community development a student must complete 27 credits. These courses must include USP 300, USP 301, USP 302. 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. Students who have already completed some of the requirements from the minor before Fall 2013 should meet with the Community Development Student Advisor to ensure a smooth transition to the new 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 233 Real Estate Principles.....	3
USP 311 Introduction to Urban Planning.....	4
USP 312 Urban Housing and Development	4
USP/RE 360 Real Estate Finance I	4
USP 423 Real Estate Development.....	4
USP 431/Ec 431/RE 431 Urban Economics	4
USP/RE 438 Real Estate Law	3
Electives	6
Fin 459 Valuation (4)	
RE 439 Real Estate Valuation I (3)	
USP 326 Neighborhood Conservation and Change (4)	
USP 360/Fin 360 Real Estate Finance I (3)	
USP 425 Community and the Built Environment (4)	
USP 427 Downtown Revitalization (3)	
USP 428 Concepts of Community Development (4)	
USP 451 Community Economic Development (3)	
USP 455 Land Use: Legal Aspects (3)	
USP 468 Oregon Land Use Law (3)	
Total	32

Requirements for minor in Sustainable Urban Development. As population worldwide becomes concentrated in cities and metropolitan regions, it has become imperative that urban development occur in a sustainable and resilient manner. The minor in Sustainable Urban Development will provide students with an opportunity to further their understanding of what it will take to make cities sustainable. Students who complete the minor will understand the foundations of sustainability, the tools of sustainable development, and the issues and challenges of making places sustainable. UNST 224 Environmental Sustainability (or a suitable alternative) is a prerequisite. The minor requires a total of 27 credits as follows: USP 313 Urban Planning: Environmental Issues (4) USP 324 Healthy Communities (4) USP 425 Community and the Built Environment USP 490 Green Economics and Sustainable Development (3) Twelve elective credits from the approved list.

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 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 first "urban century".

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.

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 58, 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 Real Estate Development.

An essay of intent, two recommendations, a resume, a standardized GRE or GMAT exam. MRED students are admitted for fall term only, with three application deadlines: November 1 (early admission), February 1 (scholarship eligibility), and April 1 (priority admission). Admission is handled jointly between the School of Urban Studies and Planning and the School of Business Administration. Applicants should consult: <http://www.mred.pdx.edu>.

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 professional 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 January 15.

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. Instructions for the doctoral applicant's personal essay can be found on the School website. For the doctoral program, students are admitted fall term only. The deadline for fall term applications for the Ph.D. program is January 15.

Graduate Certificates

Graduate certificates in real estate development, transportation, and urban design 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 <http://www.pdx.edu/usp/graduate-certificate-urban-design>, <http://www.pdx.edu/usp/GCRED>, and <http://www.cts.pdx.edu/gradcert.php>.

Degree requirements

Master of Real Estate Development.

The Master of Real Estate Development (MRED) is a professional degree, training students in the areas of real estate development within the context provided by principles of sustainability, social equity, and community-based development. By its nature, real estate education is multi-disciplinary, involving finance, urban planning, architecture, law, engineering, design, appraisal, and other disciplines. To deliver this education, the MRED degree is a joint degree of the School of Business Administration and the Toulan School of Urban Studies and Planning.

The objective for this program is to provide a unique and exceptional graduate degree that will enable students to assist in the development and management of property with an understanding of the role that such development plays in the context of broader community concerns and history, and in the context of the surrounding neighborhood and city. Students will work closely with high-level industry professionals in their classes and workshops.

The MRED degree is designed to accommodate students with a wide variety of undergraduate degrees and is best suited for students who have gained at least two years of industry experience prior to their admis-

sion date. The program is designed so that it can be completed in three years on a part-time basis or two years on a full-time basis. Students are admitted for fall term only.

Curriculum Requirements	Credits
Sustainable Urban Development	
USP 569: Sustainable Cities and Regions	4
USP 611: America's Changing Neighborhoods.....	3
USP 612: Community, Planning, and Ethics	3
Finance and Policy	
RE 521: Real Estate Finance I	4
RE 522: Real Estate Finance II	4
RE 548: Real Estate Market Analysis	3
RE 573: Housing Economics	4
USP 596: Affordable Housing Finance.....	3
Project Development	
USP 523: Real Estate Development I	4
USP 527: Downtown Revitalization	3
USP 538: Real Estate Law	3
USP 546: Real Estate Development II	4
USP 624: Development Project Design	3
Career Development, Capstone, and Electives	
RE 531: Executive Perspectives on Real Estate	1
RE 562: Real Estate Development Workshop	4
Electives	18
Total	68

Real Estate Development Workshop.

The culminating experience of the MRED is RE 562 Real Estate Development Workshop. Students in that class form a team that produces a development proposal for a multi-block site in a major city, advised by local industry professionals. Each team will produce a professional report and present their findings before an audience of real estate professionals.

Master of Urban Studies. The Master of Urban Studies provides training for students seeking employment in public and private urban research organizations.

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 613 Urban Economic and Spatial Structure ...	3
USP 614 History and Theory of Urban Studies	3
USP 617 Sociology and Politics of Urban Life	3
USP 630 Research Design.....	4
USP 634 Data Analysis I	4
USP 683 Qualitative Analysis.....	4
USP 697 Urban Studies Seminar.....	4

The first four 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. 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.

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 five 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 economic development. One field of specialization is required as part of the program leading to the degree. This degree is fully accredited by the Planning Accreditation Board.

Core courses	Credits
Planning sequence	
USP 540 History and Theory of Urban Planning	4
USP 541 Dynamics of Planning Practice	3
and one of the following:	
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 proj-

ect 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 com-

munity 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.

- **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 differences, 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.

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.

A 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 1 credit 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 9 credits of grades below B- 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 below B- in both programs. MURP students must receive grades of at least B- in all core courses.

Courses

Courses with an asterisk () are not offered every year.*

USP 199

Special Studies (1-4)

USP 233

Real Estate Principles (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 finance methods. Prerequisites: EC 201.

USP 299

Special Studies (1-4)

USP 300

Introduction to Urban Studies (4)

Introduction to the interdisciplinary field of urban studies drawing on the urban planning, economics, geography, sociology politics, and the humanities to provide basic concepts for understanding the urbanized world of the twenty-first century. Cities as economic, social, and political systems and ways in which people have thought about cities

USP 301

Introduction to Community Development (4)

An investigation of concepts, models and perspectives of community development practice.

Explores social, cultural, religious, political economic and environmental aspects that affect community development practice. Asset-based and sustainable human development models and action research are emphasized. The course utilizes teaching cases and experts from the field and requires substantial reading reflection and discussion.

USP 302

Theory and Philosophy of Community Development (4)

New approaches to the philosophy of community; theory and comparative practice; and case study of local theory and practice, presentation of an in-depth case study from the Pacific Northwest.

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 Environmental Issues (4)

Environmental issues and problems are evaluated in the urban context. The course addresses both the origins of urban environmental problems and their economic and social implications. Finding solutions that attempt to achieve balance between social, economic, and ecological factors is addressed in the context of urban environmental policy, planning and community activism.

USP 314

The City in Film (4)

Critically examines urban social issues reflected in films from different countries. Includes in-class screening, lecture and discussion, and film review writing exercises. Topics for discussion include the urban form, issues of race, gender and social class, the relationships among communities, political authority, industry, commerce, police, street gangs, criminals, public schools, and other institutions and denizens of the city. Provides linkages to other courses in USP's undergraduate community development major and to issues related to urban studies.

USP 316

Community Organizing and Social Change (4)

Community organizing seeks to involve people in collective action to address issues of social change and social justice. This course covers the history, philosophy and goals of community organizing and various elements of the organizing process. Case studies will provide the basics for the development of action plans.

USP 317

Introduction to International Community Development (4)

An investigation of concepts, models, and perspectives of International Community Development practice. Explores social, cultural, religious, political, economic, and environmental aspects that affect community development practice in the Third or Developing World. Asset-based and sustainable human development models and action research are emphasized. The course utilizes teaching cases and experts from the field and requires substantial reading, reflection and discussion.

USP 324

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 325

Community and the Built Environment (4)

This course examines the relationships between urban form and social patterns, and efforts by urban designers to influence community life by shaping the built environment. The history of ideas about urban form and community development, and the history of proposed and implemented projects will be surveyed, and their relevance for contemporary urban planning and design practices will be assessed. Initiatives in the Portland metropolitan area to enhance community livability will be studied.

USP 326

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 350

Concepts of Public Participation (4)

Examination of principles, methods, and programs for giving explicit attention to the perspectives of the public in the development and implementation of public policies and programs. Sets public participation in its historical context with an assessment of its impact to date. Participation from the perspective of both the public and the government will be covered as will the variety of approaches for achieving participation goals and objectives.

USP 360

Real Estate Finance I (4)

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: Ec 201. (The course is cross listed as RE 360, and 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 386

Portland Past and Present (4)

Begins with the geological/geographical foundations of Portland then briefly explores Portland's original inhabitants, early exploration and commercial growth. Particular attention is paid to the 20th century and the plans and projects that have guided Portland's development over the past 100 years. Considers the shaping of Portland as a regional city, examining the evolving cityscape, architecture, land use, and transportation, and its development from political, social, economic, and cultural perspectives.

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 411/511

Pedestrian and Bicycle Planning Lab (2)

A practical approach to bicycle and pedestrian planning and design through a project-based course that focuses on all aspects of the planning process. Students research and develop solutions to a practical challenge in the Portland region and present recommendations in report and presentation form. Prerequisites: junior standing.

USP 414/514

Transportation Seminar (1)

This weekly seminar features a different speaker each week covering various topics in transportation research and practice. The topics cover all modes of transportation, with a focus on current practice. Course is cross-listed course with CE. This course may be taken for credit up to three times.

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 or BA 303.

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**Participatory Research Methods for Community Development (4)**

This course introduces students to participatory methods, placing special emphasis on research ethics, the positionality of the researcher, and embedding research within community development practice. It focuses on research design, data collection, data analysis, and the dissemination of results. Various approaches to measuring urban

phenomena are covered, including basic interview techniques, survey methods, and quantitative analytical methods.

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 438/538**Real Estate Law (3)**

Provides students with a comprehensive summary of real property from a legal perspective with an emphasis on transactional issues. Includes issues relating to types of ownership, descriptions of property, easements, public and private limitations on use, real estate contracts, forms utilized in transfers, financing and title assurances. The class will enable students to understand the legal framework and the rights and responsibilities of owners and transferors/transferees of real property. Prerequisites: EC 201 (undergraduates). Expected preparation for graduate students: RE 521. This is the same course as RE 438/538; may be taken only once for credit.

USP 440**Measuring People and Communities in the Urban Context (4)**

This is an applied research methods course that provides students with the essential data skills for quantitatively measuring social, economic, and demographic trends across urban places. The course provides students with an appreciation for underlying theoretical and practical research methods for identifying, measuring, and conceptualizing trends specific to urban places. Prerequisites: upper-division standing.

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 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 452**GIS for community Development (4)**

This course uses lab exercises and lectures to help students develop an in-depth understanding and basic skills for the uses of geographic information systems in community development and planning. Prerequisites: upper-division standing.

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 460**Community Development Field Seminar (6)**

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. Prerequisites: completion of the Community Development Core and at least one course or an equivalent from among those listed in Methods in Community Development.

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 475/575

Urban Design Workshop (4)

The workshop will explore the use of urban design as an integral part of the planning process through the creation of an urban design plan. Projects in the Portland region will be chosen to familiarize students with the practice of urban design planning and the products of the workshop will be presented to the public. Prerequisites: enrollment in good standing in the MARCH or MURP graduate degree programs or permission of instructor.

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

Public Participation GIS (3)

Offered as a studio-based GIS class. The objective is for students to apply GIS skills acquired in previous GIS course 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. Expected preparation: USP 531 and USP 543 or USP 591 and USP 592.

USP 496/596

Affordable Housing Finance (3)

Introduction to the unique challenges of financing and developing affordable housing projects. The challenges and tools for financing rental as well as owner-occupied housing will be covered, and case studies will be used to illustrate the ways in which financing for affordable housing is created and used, and poses unique challenges for investors, jurisdictions, and community-based groups. Expected preparation: USP 312U.

USP 503

Dissertation (Credit to be arranged.)

USP 510

Selected Topics (1-4)

USP 512

Environmental Planning Methods (3)

Examination of the patterns and processes in human-dominated landscapes, and the tools for

understanding human behavior and decision making. By applying several environmental planning tools to managing landscapes, this course aims to provide students with skills to translate data into information. Topics covered include, land conservation, impact of land use on watersheds, sustainability design, environmental impact assessments, and environmental modeling and simulation. Focus is on the application of tools to addressing pressing problems of regional significance.

Expected preparation: USP 531 or Geog 488/588.

USP 513

Introduction to Landscape Architecture (3)

An introduction to the history, theory and methods of landscape architecture. Course materials to include key readings from the field, case studies, and hands-on exposure to the thought processes underlying the work of landscape architects.

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 517

Urban Economic Development Policy (3)

This course analyzes urban economic development policy by building on an overall framework that demonstrates how urban economies create and distribute wealth and affect citizens' quality of life. Federal, state, and local policies must pursue three broad objectives: 1. raising the area's standard of living; 2. preserving and protecting environmental quality and quality-of-life; 3. reducing poverty and income inequality. This course provides students the ability to analyze and assess alternative policies through an understanding of the theoretical foundations of urban growth and decline; through the ability to apply analytical methods for assessing policy effectiveness; by examination of evidence of policy effectiveness; by reviewing case studies; and via a student's personal research of specific urban problems. Prerequisites: USP 515 or equivalent courses in economics.

USP 518

Energy and Society (3)

Consideration of the role of energy in human society, including energy and social change, energy and urban form, technologies of energy supply and demand, social institutions governing access to energy, and cultures of consumption. Current social issues involving energy efficiency, renewable energy technologies and climate change are stressed.

USP 520

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

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

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 (4)

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 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 529

Green Buildings I (3)

Reviews development of new real estate properties and communities with attention to environmental sustainability, reduced operating costs, and enhanced residential and working environmental conditions. Topics include green building standards and techniques for assessing project success.

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 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

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

Dynamics of Planning Practice (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)

Introduces fundamental concepts and methods used in multi-modal urban transportation planning, including problem identification, alternatives analysis, evaluation and decision making, plan implementation, and program management. Exposes students to processes and analytical methods from multiple disciplines, such as law, politics, engineering, sociology, economics, finance, management and marketing. Emphasis on analysis of moderately complex technical information and its interpretation for communication with decision makers. Prerequisite: USP 535 or equivalent coursework in descriptive and inferential statistics and data presentation. Recommended: USP 515 or USP 537 or an equivalent intermediate-level course in applied microeconomics.

USP 546

Real Estate Development II (4)

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

Urbanization and Planning in the Global South (3)

Urban planning interventions in many cities in the Global South have been facing big challenges as rapid population growth has led to resource scarcity, environmental degradation, and social inequality. This course develops tools and ideas to understand issues confronting cities in diverse socio-economic, political, and cultural circumstances, and how globalization impacts the local space of cities and regions. It focuses on challenges and opportunities in formulating appropriate planning interventions, and prepares planners to work in the diverse and rapidly changing contexts of the Global South.

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 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 552

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 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

Internship Seminar (1)

A 400-hour internship, or combination of internships, is required for completion of the MURP degree. This Seminar serves as a means for graduate students admitted to the MURP degree program to share information regarding securing internships and the work products associated with internship experiences. An annual calendar for the seminar will be posted at the beginning of the year. Attendance at scheduled seminar meetings is required for all MURP candidates during the first two years of their enrollment in the program.

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 563

Real Estate Construction (3)

Reviews the nature and characteristics of the real estate construction process, including materials, cost estimating procedures, budgets, schedules and legal procedures. Emphasis on the selection of building systems and review of the forms of construction contracts and associated documents commonly used in the industry. Reviews lessons learned from case studies. Prerequisite: USP 598.

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

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

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 569

Sustainable Cities and Regions (4)

Explores the questions of whether and how cities can be sustainable—and how they can continue as places that sustain cultures, economics, and nature. Basic technological and theoretical models of human-nature interaction will be considered, along with visionary possibilities for the future of cities and urban regions, globally and in Portland.

USP 570

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

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

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

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. Expected preparation: USP 515 or RE 521.

USP 577

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

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 free-way location, techniques for valuation of non-priced 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

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 582/682

Sustainable Transportation (3)

This course covers the sustainability dimensions of transportation, considering historical trends and future prospects. Topics covered in the course include energy use and alternative energy sources, technological change, traffic safety, vehicle emissions, environmental justice, the role of transportation in the economy, and the role of land use and urban design. Prerequisites: Graduate Standing

USP 583

Transportation Finance (3)

Much of the current funding for roads, transit, and freight comes from fuel taxes; but increasing fuel efficiency of vehicles and the use of alternative energy sources raise questions about the long-term viability of this revenue source. This course will review existing transportation finance and examine some of the proposals for alternative financing mechanisms.

USP 584

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

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

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 practical 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

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 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 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 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 611****America's Changing Neighborhoods (3)**

Traces the public and private decisions that have shaped the residential environment of American cities. Examines the tensions among market-based development, community action, and public intervention. Topics range in scale from housing style choices to aggregate trends in metropolitan form and cover a wide range of actors including individual households, private builders and developers, reformers, nonprofit organizations, and governments.

USP 612**Community, Planning, and Ethics (3)**

An introduction to the history and theory of community development in North America, the theory and practice of urban planning in North America, and to the ethics of civic and business practices linking the public, private, and nonprofit sectors. Focus on plans as the outcome of political processes with specific consequences for different constituencies within the city.

USP 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 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 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 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 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 inter-governmental cooperation and conflict within metropolitan regions will be analyzed.

USP 619**Development Partnerships (3)**

Considers public and private partnerships to develop real estate in terms of the benefits to the wider urban community and policy goals such as affordable housing, community redevelopment to economic development, and sustainability. The course looks at how public and private organizations can meet policy goals, create economic returns, and mitigate risk. Expected preparation: USP 523.

USP 624**Development Project Design (3)**

Provides an understanding of architectural practice, the value added by design, the intersection of design with broader community concerns and developer's objectives, and the management of the design process, including tools for decision analysis in all phases of the building design process. Case studies of the major building types will be presented. Expected preparation: USP 523.

USP 625**Green Buildings II (3)**

Applies green building concepts to advanced real estate problems, including the rehabilitation and adaptive reuse of existing real estate properties. Properties being covered include retail, office, hotel, industrial, and residential properties. The class will examine techniques for increasing density, recycling materials, improving energy efficiency, and creating healthy work and living environments. The course will look at property management and portfolio management from a green building perspective. Prerequisite: USP 529.

USP 630**Research Design (4)**

Principles of research design, including philosophical bases of scientific research, approaches to research, problem identification, problem state-

ment, 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 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 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 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 prerequisites: USP 534/634 or an equivalent course approved the instructor and prior experience with statistical software.

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 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 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 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 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 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 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.

Research centers and institutes

Center for Urban Studies

**320 Urban Center
503-725-4068**

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 and has sponsored conferences on important urban topics for the interested public.

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 houses the Community Environmental Services (CES) Program the PSU-China Innovations in Urban Studies Program, and the Urban Sustainability Accelerator. CES provides assistance to local communities, governmental agencies, and private organizations on a contractual basis. The PSU-China Innovations in Urbanization Program (<http://www.pdx.edu/innovations-in-urbanization>) promotes dialogue and exchanges among professionals, students, and scholars in the U.S. and China. The Urban Sustainability Accelerator (USA), (www.pdx.edu/sustainability-accelerator) supports U.S. cities in sustainable development. All programs serve to provide students with the opportunity to develop leadership, practical job skills, and civic responsibility through education, service, and research which addresses urban issues and resource sustainability.

The center also provides support for the Center for Transportation Studies. The CTS facilitates and conducts multidisciplinary research on transportation issues, and promotes scholarly development and exchange among students, faculty, and transportation professionals.

Center for Real Estate

**631 SW Harrison, Room 270
503-725-5175
<http://www.pdx.edu/realestate>**

In 2004, the Center for Real Estate was

formed as a partnership between PSU's acclaimed Schools of Urban Studies and Planning and Business Administration to manage the real estate programs at Portland State and serve as the vital link between the University and the real estate community. Consisting of an Executive Director, an Academic Director, and an Assistant Director, the Center staff work with employers to not only meet their internship and employment needs, but also provide them with valuable updates on the real estate industry through the Center's annual real estate conference.

The Center's PSU Real Estate Quarterly publication showcases articles on innovation in the real estate industry and trends affecting the real estate market, regional planning and the regional economy.

The Center supports four real estate degree programs at Portland State University: a Master of Real Estate Development, a Graduate Certificate in Real Estate Development, an Undergraduate Major in Real Estate Finance, and an Undergraduate Minor in Real Estate Development. Faculty from both the Nohad Toulan School of Urban Studies and Planning and the School of Business Administration teach the courses within each program.

Center address: School of Business Administration, 631 SW Harrison Street, room 220.

Center for Transportation Studies

**350 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 (CTS), a unit within the Center for Urban Studies, strives to stimulate and conduct multidisciplinary research on transportation issues, facilitating the dissemination of information and encouraging the implementation of research results.

CTS holds a weekly, public seminar during the academic year. The Initiative for Bicycle and Pedestrian Innovation, within CTS, aims to advance bicycling and walking as integral elements of the transportation system.

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 15 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
Matthew W. Donegan , Portland President	2013
Jill W. Eiland , Hillsboro Vice President	2013
Lynda M. Ciuffetti , Corvallis	2014
Brianna R. Coulombe , LaGrande	2013
Orcilia Forbes , Portland	2014
Allyn Ford , Roseburg	2013
James L. Francesconi , Portland	2016
Farbodd A. Ganjifard , Corvallis	2013
Paul J. Kelly, Jr. , Portland	2015
James Middleton , Bend	2016
Dr. Emily J. Plec , Monmouth	2013
Kirk E. Schueler , Bend	2013
David V. Yaden , Portland	2016

Officers of the System

Melody Rose, Ph.D. , Interim Chancellor
Jay D. Kenton, Ph.D. Vice Chancellor for Finance and Administration
Karen Marrongelle, Ph.D. Interim Vice Chancellor for Academic Strategies
Ryan J. Hagemann, J.D. Legal Counsel
Marcia M. Stuart Associate Board Secretary
Charles Triplett Board Secretary

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 special-

ized, 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

Wim Wiewel, Ph.D.

President
Portland State University

Bob Davies, Ph.D.

President
Eastern Oregon University

Christopher Maples, Ph.D.

President
Oregon Institute of Technology

Edward Ray, Ph.D.

President
Oregon State University

Mary Cullinan, Ph.D.

President
Southern Oregon University

Michael Gottfredson, Ph.D.

President
University of Oregon

Mark Weiss, M.B.A.

President
Western Oregon University

Portland State University

Faculty members are listed with their programs. Academic faculty are listed starting on page 392. 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 April 2013 and may not include changes and appointments made after that time.

Office of the President

Wim Wiewel (2008) Ph.D.
President. Ph.D. 1984 Northwestern University.

Lois Davis (2009) B.S.
Chief of Staff, Special Assistant to the President. B.S. 1977 University of Oregon.

Academic Affairs Office of the Provost

Sona Karentz Andrews (2010) Ph.D.
Provost; Professor of Geography. Ph.D. 1981 Arizona State University.

Carol Mack (1986) Ph.D.
Vice Provost for Academic Personnel and Leadership Development; Professor of Education. Ph.D. 1988 University of Illinois.

Kevin A. Reynolds (2005) Ph.D.
Vice Provost for Budget, Planning and Internationalization; Professor of Chemistry. Ph.D. 1987 University of South Hampton, England.

Sukhwant Jhaj (2001) M.Arch.
Vice Provost for Academic Innovation and Student Success. M. Arch., 1994 Cranbrook Academy of Art.

Center for Academic Excellence

Amy Spring (1997) M.P.A.
Assistant Director Community-Based Learning. M.P.A. 2009 Portland State University.

Janelle Voegelé (1997) M.A.
Interim Director for Teaching and Learning. M.A. 1999 Portland State University.

Patrice Morris Hudson (2003) M.S.
Teaching Support Specialist. M.S. 2008 Portland State University.

Graduate Studies

Margaret Everett (1996) Ph.D.
Associate Vice Provost and Dean of Graduate Studies; Professor of Sociology. Ph.D. 1995 Yale University.

International Affairs

Ron L. Witzak (1996) B.A.
Executive Director of International Affairs and Director of Education Abroad. B.A. 1991 Oregon State University.

Jeff Baffaro (2001) B.A.
Program Manager, International Special Programs. B.A. 1978 Portland State University.

David Brandt (2011) B.A.
International Scholar & Faculty Adviser. B.A. 1985 Whitman College.

Sharon Carstens (1987) Ph.D.
Director, Institute for Asian Studies. Ph.D. 1980 Cornell University.

Debra Z. Clemans (1997) M.A.
Financial Officer; Director of Fulbright & Boren Programs. M.A. 1995 Portland State University.

Elisheva Cohen (2011) M.A.
Outreach Coordinator, Middle East Studies Center. M.A. 2011 Columbia University, Teachers College.

Alyse Collins (2004) M.A.
Assistant Director of Education Abroad. M.A. 2007 Portland State University.

Joshua N. Davis (2008) B.A.
International Student and SEVIS Adviser. B.A. 2002 Pacific University.

Anna Gindlesperger (2007) M.A.
International Student Life Adviser. M.A. 2009 Portland State University.

Rachel Goff (2004) B.A.
Education Abroad Adviser. B.A. 2007 Portland State University.

James Grehan (2005) Ph.D.
Director, Middle East Studies Center. Ph.D. 1999 University of Texas.

Jennifer Hamlow (2012) M.A.
Faculty-Led Programs Coordinator. M.A. 2002 De Paul University.

Paula Harris (1997) M.Ed.
International Student Adviser. M.Ed. 1997 Oregon State University.

Kanaan Kanaan (1998) B.A.
Middle East Student Adviser. B.A. 1999 Portland State University.

Sarah Kenney (2004) B.Sc. Hons.
International Student Life Adviser. B.Sc. Hons. 2004 University of Manchester Institute of Science & Technology, U.K.

Blythe Knott (2006) M.A.
Education Abroad and International Internship Adviser. M.A. 1997 University of Colorado at Boulder.

Kimberly Larson (2007) B.A.
Program Manager, PSU/Waseda Transnational Programs. B.A. 2002 Western Washington University.

Masumi Lint (2011) M.A.
Program Manager, International Special Programs. M.A. 2006 University of Idaho.

Meiru Liu (1996) Ph.D.
Director, Confucius Institute; Assistant Professor of Business, Chinese Language & Culture. Ph.D. 1996 Portland State University.

Christina Luther (1998) M.A.
Associate Director, International Student & Scholar Services. M.A. 1993 Portland State University.

Megan McLaughlin (2006) M.A.
International Student Adviser. M.A. 1998 George Washington University.

Katherine Morrow (1998) B.A.
Program Administrator, Institute for Asian Studies & Confucius Institute. B.A. 1991 Willamette University.

Sally Mudiama (2001) M.A.
Director, PSU/Waseda Transnational Programs. M.A. 1991 London School of Economics & Political Science, University of London.

Carey Myles (1998) M.A.
Instructor, PSU/Waseda Transnational Programs. M.A. 2001 Portland State University.

Eve Nilenders (2008) M.A., M.P.A.
International Faculty Adviser. M.A., M.P.A. 2001 Indiana University.

Andrea Price (1999) M.A.
Executive Assistant to the Executive Director of International Affairs. M.A. 2000 Portland State University.

Tam Rankin (2010) M.A.
Program Manager, Middle East Studies Center. M.A. 2002 Johns Hopkins University.

Jill Townley (1997) M.S.
Associate Director of International Student Life. M.S. 2001 Portland State University.

Judy Van Dyck (1992) B.A.
Director, International Student and Scholar Services and International Special Programs. B.A. 1981 University of Oregon.

Glen Zimmerman (2001) M.A.
Senior Instructor, PSU/Waseda Transnational Programs. M.A. 1996 University of Washington.

Library

Marilyn K. Moody (2012) M.S.
Dean, University Library, Professor. M.S. 1979 University of Illinois.

Linda Absher (2003) M.L.I.S.
Humanities Librarian, Associate Professor. M.L.I.S. 1993 University of California, Berkeley.

Sarah E. Beasley (1997) M.A.I.S., M.L.I.S.
Humanities & Social Sciences Librarian, Associate Professor. M.A.I.S. 1996 Oregon State University; M.L.I.S. 1989 University of Michigan.

Tom Bielavitz (2006) M.L.I.S.
Assistant University Librarian for Administrative Services, Planning, and Digital Initiatives, Associate Professor. M.L.I.S. 2006 Drexel University.

Michael S. Bowman (1992) M.Libr.
Engineering Librarian and Data Management Coordinator, Associate Professor. M.Libr. University of Washington.

Andrea Bullock (2012) M.L.S.
Reference & Instruction Librarian, Instructor. M.L.S. 2007 Emporia State University.

Jeanne Davidson (2013) M.A., M.S.
Assistant University Librarian for Public Services, Associate Professor. M.A. 1990 University of Missouri; M.S. 1987 University of Wyoming.

Jill Emery (2011) M.L.I.S.
Collection Development Librarian, Assistant Professor. M.L.I.S. 1995 University of Texas, Austin.

Meredith Farkas (2011) M.L.I.S.
Head of Instructional Services, Assistant Professor. M.L.I.S. 2004 Florida State University.

Emily Ford (2012) M.L.S., M.I.S.
Urban & Public Affairs Librarian, Assistant Professor. M.L.S. 2007 Indiana University-Bloomington; M.I.S. 2007 Indiana University-Bloomington.

Arthur Hendricks (1996) M.S.
Social Sciences Librarian, Associate Professor. M.S. 1995 University of Illinois, Urbana-Champaign.

Amy Hofer (2010) M.L.I.S.
Distance Learning Librarian, Senior Instructor. M.L.I.S. 2007 San Jose State University.

Mary Ellen Kenreich (1992) M.L.S., M.P.A.
Head of Acquisitions and Preservation, Professor. M.L.S. 1980 Kent State University; M.P.A. 1999 Portland State University.

Kristen Kern (1998) M.L.S.
Fine and Performing Arts Librarian, Associate Professor. M.L.S. 1997 Emporia State University.

Thomas Larsen (2003) Ph.D., M.L.S.
Head of Monographic Cataloging, Associate Professor. Ph.D. 1988 University of California, Berkeley; M.L.S. 1997 Emporia State University.

Cristine Paschild (2007) M.A., M.S.I.
M.S.I. University Archivist and Head of Special Collections, Assistant Professor. M.A. 1994 University of Michigan, Ann Arbor; M.S.I. 2001 University of Michigan, Ann Arbor.

Kimberly Pendell (2010) M.S.I.S.
Social Work and Social Sciences Librarian, Assistant Professor. M.S.I.S. 2005 University of Texas, Austin.

Joan Petit (2009) M.S.L.S.
Librarian for History, Black Studies, and Judaic Studies, Assistant Professor. M.S.L.S. 2006 University of North Carolina, Chapel Hill.

Robert Schroeder (2004) M.L.I.S.
Education Librarian, Associate Professor. M.L.I.S. 1995 Wayne State University.

Gretta Siegel (1998) M.L.S., M.S.
Science Librarian, Professor. M.L.S. 1985 Syracuse University; M.S. 1988 Oregon State University.

Wendy A. Stewart (1998) M.L.S.
Digital Resource Services Librarian, Associate Professor. M.L.S. 1995 Syracuse University.

Jian Wang (1999) M.L.I.S.
Head of Electronic and Continuing Resources, Professor. M.L.I.S. 1996 Wayne State University.

Claudia V. Weston (2001) M.L.S.
Government Information Librarian, Professor. M.L.S. 1981 University of Maryland.

Kimberly Willson-St. Clair (2011) M.S.
Reference & Instruction Librarian, Instructor. M.S. 2001 University of Illinois, Urbana-Champaign.

Qi Wu (2005) M.L.I.S.
Business Librarian, Associate Professor. M.L.I.S. 2002 University of Illinois, Urbana-Champaign.

Emeriti Faculty

William Abrams (1962) M.S.L.S.
Principle Serials Cataloger; Associate Professor. M.S.L.S. 1961 Syracuse University School of Information Studies.

Daphne T. Allen (1970) M.B.A.
Associate Professor Emerita. M.B.A. 1978 University of California, Los Angeles.

Laurence L. Bruseau (1968) M.L.S.
Associate Professor Emeritus. M.L.S. 1962 University of Michigan.

Patricia H. Byrd (1961) M.Libr.
Associate Professor Emerita. M.Libr. 1959 University of Washington.

Sharon Elteto (1997) M.L.S.
Associate Professor Emerita. M.L.S. 1997 Emporia State University.

Donald G. Frank (2000) M.A.L.S.
Professor Emeritus. M.A.L.S. 1982 Texas Tech University.

Robert W. Lockerby (1967) M.S.
Professor Emeritus. M.S. 1979 Portland State University.

Anne G. McMahon (1969) M.L.S.
Associate Professor Emerita. M.L.S. 1965 Pratt Institute.

Gwen E. Newborg (1969) M.A.
Professor Emerita. M.A. 1977
University of Washington.

Oren O. Ogle (1969) M.Lib.
Associate Professor Emeritus. M.Lib.
1969 University of Washington.

C. Thomas Pflingsten (1980) M.L.S.
University Librarian Emeritus. M.L.S.
1966 University of California,
Berkeley.

Faye Powell (1985) M.A.
Professor Emerita. M.A. 1982 San
Francisco State University.

Terry Rohe (1983) M.L.S.
Professor Emerita. M.L.S. 1972
University of Oregon.

Gary S. Sampson (1972) M.L.S.
Professor Emeritus. M.L.S. 1972
University of California, Berkeley.

Helen H. Spalding (2005) M.A., M.P.A.
Professor Emerita. M.A. 1974
University of Iowa, M.P.A. 1985
University of Missouri-Kansas City.

Rosalind C. Wang (1985) M.S.L.S.
Professor Emerita. M.A. 1976 Long
Island University.

Majel M. Warren (1964) B.S.L.S.
Associate Professor Emerita. B.S.L.S.
1945 George Peabody College for
Teachers.

Robert C. Westover (1971) M.L.S.
Professor Emeritus. M.L.S. 1971
University of Oregon.

William B. Wilson Jr. (1976) M.L.S.
Associate Professor Emeritus. M.L.S.
1970 University of Western Ontario
(Canada).

Center for Online Learning

Sarah E. Berry (2002) Ph.D.
Educational Technology Specialist;
Adjunct Assistant Professor of
English. Ph.D. 1996 New York
University.

Michael R. Chamberlain (2002) M.S.
Instructional Designer. M.S. 2002
University of Houston Clear-Lake.

Johannes De Gruyter (2012) M.A.,
M.Sc. Interim Director of Pedagogy
and Platform; Policy Analyst. M.A.
2004 University of Leuven; M.Sc.
2005 University of Amsterdam.

Steve Gance (2008) Ph.D.
Instructional Designer. Ph.D. 2000
University of Wisconsin, Madison.

Aifang Gordon (2007) Ph.D.
Instructional Designer. Ph.D. 2007
Ohio University.

Molly A. Griffith (2008) M.S.
Instructional Designer. M.S. 2008
Portland State University.

Marie S. Lewandowski (2003) M.Ed.
Instructional Designer. M.Ed. 1995
Kent State University.

Korina Pongracz (2008) B.S.
Program Administrator. B.S. 2008
Portland State University.

Vince Schreck (2005) Ed.D.
Instructional Designer. Ed.D. 2004
Portland State University.

Mark Terui (2010) M.A.
Instructional Designer. M.A. 2001
Pepperdine University.

Undergraduate Studies

Sukhwant Jhaj (2001) M. Arch.
Associate Vice Provost for
Undergraduate Success; Dean of
Undergraduate Studies. M. Arch.
1994 Cranbrook Academy of Art.

Office of Athletics

Michael "Torre" Chisholm (2007) B.A.
Athletic Director. B.A. 1992
University of California, Santa
Barbara.

Nigel Burton (2009) M.B.A.
Head Football Coach. M.B.A. 2001
University of South Florida.

Tobin Echo-Hawk (2006) B.S.
Head Softball Coach. B.S. 1996
University of Nebraska.

Dennis Ferguson (2007) B.A.
Director of New Business
Development. B.A. 1959 University
of California, Santa Clara.

Tyler Geving (2005) M.A.
Head Men's Basketball Coach. M.A.
2000 City University.

Ronny Harrison (2008)
Head Coach, Track and Field/Cross
Country. Portland State University.

Sherri Murrell (2007) B.A.
Head Women's Basketball Coach.
B.A. 1991 Pepperdine University.

Laura Schott (2005) B.A.
Head Women's Soccer Coach. B.A.
2004 University of California,
Berkeley.

Michael Seeman (2005) B.S.
Head Volleyball Coach. B.S. 1999
Portland State University.

Jay Sterling (2009) B.B.A.
Head Coach, Men's and Women's
Tennis. B.B.A. 2007 The University of
Georgia, Athens.

Kathleen Takaishi (2008) B.S.
Head Women's Golf Coach. B.S. 1999
Oregon State University.

Zack Wallace (2007) B.S.
Associate Athletic Director
(Development). B.S. University of
Oregon.

Office of Vice President for Enrollment Management and Student Affairs

Jackie Balzer (2008) Ed.D.
Vice President for Enrollment
Management & Student Affairs.
Ed.D. 2006 Oregon State University.

Dan Fortmiller (1985) M.S.
Associate Vice President for
Academic & Career Services. M.S.
1989 Portland State University.

Jess Goodwin (1995) B.S.
Systems Analyst, Manager. B.S. 2003
Portland State University.

Angel James (2003)
Executive Office Coordinator for the
Office of the Vice President of
Enrollment Management & Student
Affairs.

Christina Jinghui Li (2008) B.A.
Financial Analyst. B.A. 2005 Portland
State University.

Nicholas Running (2011) B.A.
Commencement & Outreach
Coordinator. B.A. 2010 Oregon State
University.

Cindy Skaruppa (2012) Ed.D.
Associate Vice President for
Enrollment Management. Ed.D. 1993
University of Miami.

J.R. Tarabocchia (2007) J.D.
Outreach & Advancement
Coordinator. J.D. 2006 University of
New Hampshire School of Law.

Vicki Wise (2010) Ph.D.
Director of Student Affairs
Assessment & Research. Ph.D. 2004
University of Nebraska.

David Woodsum (2008) B.A.
Accountant. B.A. 2008 Portland State
University.

Admissions and New Student Programs

Melissa Trifiletti (2008) M.S.
Director, Admissions & New Student
Programs M.S. 1994 Miami University

Celeste Kreuger (2012) M.A.
Assistant Director, Admissions. M.A.
2008 Concordia University.

Robin Beavers (2011) M.A.
Assistant Director, Diversity
Recruitment. M.A. 2005 Portland
State University.

Christopher Skinner (2011) M.A.
Assistant Director, Admissions
Evaluation. M.A. 1995 University of
California, Santa Barbara.

Christine Campbell (2012) B.A.
Communications Coordinator. B.A.
1993 University of Nevada, Reno.

Marcella Flores (2013) B.A.
Coordinator, Orientation Programs.
B.A. 2011 Western Oregon
University.

Steve Immel (2011) B.A.
Information Tech Consultant. B.A.
2002 University of California,
Berkeley.

Erin Jensen (2011) B.A.
Admissions Counselor. B.A. 2008
Western Washington University.

Dave Kobzina (2005) M.S.
Senior Admissions Counselor. M.S.
2006 Portland State University.

Jonathan Luster (2009) M.S.
Assistant Director, Orientation
Programs. M.S. 2007 Miami
University.

Mario Mesquita (2010) B.A.
Admissions Counselor. B.A. 2005
University of Oregon.

Blake Red Elk (2012) B.A.
Admissions Counselor. B.A. 2006
Cameron University.

Kanani Porotesano (2006) M.S.
Campus Visits Coordinator. M.S. 2009
Portland State University.

Justin Strohmeier (2012) M.A.
Admissions Counselor. M.A. 2012
University of Arizona.

International Admissions

Agnes A. Hoffman (1996) M.B.A.
Associate Vice Provost of
International Admissions and
Enrollment Partnerships. M.B.A. 1977
Portland State University.

Christopher Anderson (2010) M.A.
Assistant Director, International
Admissions. M.A. 2009 University of
Denver.

Karen Hanson (1994) B.A.
International Admissions Counselor.
B.A. 1992 University of Oregon.

Archana Parajuli (2011) M.S.
International Admissions Counselor.
M.S. 2011 Portland State University.

Office of the Registrar

Cynthia H. Baccar (1999) M.S.
Registrar. M.S. 1994 University of
Tennessee.

Katherine Rousseau (2002) B.S.
Associate Registrar, Student
Information Technology. B.S. 2008
Portland State University.

Nicolle Nixon DuPont (2001) M.S.
Assistant Registrar & Residency
Officer. M.S. 2010 Portland State
University.

Christopher R. Hart (2006) M.P.H.
Assistant Registrar, Registration and
Records. M.P.H. 2010 Portland State
University

Adam Lutzow (2007) B.A.
Assistant Registrar, Academic
Scheduling. B.A. 2001 University of
Oregon.

Transfer Student Services

Joan Jagnodnik (1999) Ph.D.
Director, Transfer Student Services.
Ph.D. 2011 Oregon State University.

Monica Van Steenberg (2012) B.A.
Transfer Admission Specialist. B.A.
2008 Arizona State University.

Advising & Career Services

Mary Ann Barham (1992) M.S.
Director. M.S. 1991 Portland State
University.

Regina Arellano (2009) M.A.
Academic Adviser. M.A. 2006
Portland State University.

Scott Broussard (2010) M.S.
Academic Adviser. M.S. 2010 San
Francisco State University.

Jeanne Ellis (2011) B.S.
Internship Adviser. B.S. 2005
Portland State University.

Greg Flores (2008) M.S.
Associate Director. M.S. 2008
Portland State University.

Rebecca Hunt Ingersoll (2003) M.S.
Associate Director. M.S. 1997
Portland State University.

Karen Kennedy (2008) M.A.
Academic Adviser. M.A. 2000
Michigan State University.

Ann Mestrovich (2012) M.A.
Employer Relations Coordinator.
M.A. 2001 American University.

Louise Paradis (1994) M.A.
Career Counselor. M.A. 1986 Bowling
Green State University.

Leena Shreshta (2008) M.A.
Academic Adviser. M.A. 2005 School
for International Training.

Nelson Sigrah (2010) M.A.
Academic Adviser. M.A. 2008 Ball
State University.

Anne-Marie Thompson (2010) M.S.
Academic Adviser. M.S. 2009
Portland State University.

Mary Vance (1999) M.A.
Career Counselor. M.A. 1997
University of Maryland.

Shoshana Zeisman (2007) M.A.
Academic Adviser. M.A. 2005
University of Phoenix.

Campus Recreation

Alex Accetta (2001) M.A.
Director, Campus Recreation. M.A.
1993 Stanford University.

Tyler Baker (2009) M.Ed.
Facility Coordinator, Campus
Recreation. M.Ed. 2007 Washington
State University.

Todd Bauch (2003) M.A.
Assistant Director, Campus
Recreation. M.A. 1998 Southern
Illinois University.

Jessie Belter (2008) M.S.
Coordinator, Aquatics and Safety,
Campus Recreation. M.S. 2008
Clemson University.

Erin Bransford (2009), M.A.
Coordinator of Fitness & Health
Promotion, Campus Rec. M.A. 2009
Sonoma State University.

Ashley Campbell (2008) B.A.
Member Services Coordinator,
Campus Recreation. B.A. 2003 Santa
Clara University.

Ann Marie Hingley (2012) M.S.
Coordinator, Outdoor Program. M.S.
2007 Southern Illinois University.

Joelle Kenney (2005) B.S.
Office Coordinator. Campus
Recreation. B.S. 2009 Portland State
University.

Peter Kramer (2009) M.S.
Coordinator, Recreation Clubs. M.S.
2011 Portland State University.

Atsu Nagayama (2002) B.A.
Coordinator, Business Operations,
Campus Recreation. B.A. 1994
Northwestern University.

Spencer Sorensen (2011) M.S.
Coordinator, Intramurals & Special
Events. M.S. 2010 Oregon State
University.

Jennifer Welnick (2005) M.S.
Adviser, Campus Recreation. M.S.
2005 Portland State University.

Steve White (2011) M.Ed.
Logistics Coordinator, Outdoor
Program. M.Ed. 2008 Portland State
University.

Office of the Dean of Student Life

Michele Toppe (1995) M.S.
Dean of Student Life. M.S. 1998
Portland State University.

Jessica Amo (2009) M.P.A.
Director, Women's Resource Center.
M.P.A. 2008 Portland State
University.

Kris Fedor (2012) M.A.
Special Assistant, Dean of Student
Life. M. A. 2010 DePaul University.

Lissa Kaufman (2006) J.D.
Coordinator, Student Legal Services.
J.D. 1996 University of Washington
School of Law.

Gina Senarighi (2011). M.A.
Assistant Dean of Students and CARE
Coordinator. M.A. 2010 Saybrook
University.

Aimee Shattuck (2002) M.S.W.
Director, Student Activities and
Leadership Programs. M.S.W. 2002
Portland State University

Heather Spalding (2009) B.S.
Sustainability Leadership & Outreach
Coordinator. B.S. 2009 Portland State
University.

Domanic Thomas (2008) M.A.
Director, Conduct & Community
Standards. M.A. 2005 University of
Arizona.

G. Lisa Wittorff (2012) M.S.W.
Coordinator, Services for Students
with Children. M.S.W. 1988
California State University.

Disability Resource Center

Jen Dugger (2012) M.A.
Director. M.A. 2005 Southeast
Missouri State University.

Sandy Christopherson (1977) M.A.
Office Manager. M.A. 1977 George
Washington University.

Erik Ferguson (2005) B.A.
Assistive Technology Specialist. B.A.
2005 Portland State University.

Darcy Kramer (2007) M.S.
Accommodations Coordinator. M.S.
2007 Portland State University.

Karen Morehouse (2008) M.S.
Intake Specialist. M.S. 2002 Portland
State University.

Phyllis Petteys (2000) B.A.
Assistive Technology Specialist. B.A.
1986 Reed College.

Diversity and Multicultural Student Services

CeCe Ridder (2012) Ph.D.
Executive Director, Diversity and
Multicultural Student Services. Ph.D.
2011 The University of Texas at
Austin.

Felicia Arce (2013) M.Ed.
Programming Coordinator, Native
American Student & Community
Center. M.Ed. 2011 Oregon State
University.

Dean Azule (2006) B.S.
Coordinator Native American
Student Services. B.S. 2000 Western
Oregon University.

Rachel Cushman (2010) B.S.
Manager, Native American Student
& Community Center. B.S. 2005
University of Oregon.

R. Phillip Dirks (1989) M.A.
Project Director of Educational
Talent Search and Upward Bound.
M.A. 1983 Iowa State University.

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Assistant Director/Diversity
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Portland State University.

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Director, Cultural Centers; Faculty,
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Portland State University.

Andrea Griggs (2012) M.Ed.
Coordinator of Counseling Services,
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M.Ed. 2008 University of
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Program Coordinator, Multicultural
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9th-10th Grade Adviser in Upward
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Linfield College.

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Program Director, TRiO - Student
Support Services. M.A. 1998
University of Oregon.

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Coordinator, African American
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Upward Bound/ETS Adviser. B.S. 2009
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Coordinator, Latino/a Student
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Brenda Ramos (2008) B.S.
Portland Middle School Educational

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Vicky Sanchez (1999) B.A.
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Educational Talent Search: Project
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Coordinator of Instruction/Adviser,
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Portland High School Educational
Coordinator, Educational Talent
Search: Project PLUS. B.S. 1995
Western Oregon University.

Learning Center

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Residence Life

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Resident Director, Residence Life.
B.S. 2011 Western Oregon University.

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M.S. 2008 Miami University.

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Resident Director, Residence Life.
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Academic Success and Retention
Coordinator, Residence Life. M.Ed.
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Center for Student Health and Counseling

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Diane Smith (2003) B.S.
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Office of Vice President for Finance and Administration

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Vice President for Finance and
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Don Forsythe (1999) M.S.Ec.
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Chief of Staff, FADM. B.S. 1996
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University Risk Manager. J.D. 2002
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Executive Director for Campus and
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M.U.R.P. 2004 Portland State
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Campus Planning Office

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Campus Public Safety

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Campus Sustainability Office

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Human Ecology & Sustainable
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North Carolina Greensboro.

Capital Projects and Construction

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Construction Engineering and
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University.

Facilities and Property Management

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Human Resources

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Associate Vice President for Human
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Information Technology

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Transportation and Parking Services

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University Financial Services

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Office of General Counsel

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Office of Global Diversity & Inclusion

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Office of Institutional Research and Planning

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Office of Vice President for Research & Strategic Partnerships

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Institute for Sustainable Solutions

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Communications Director. M.J. 1997 University of California Berkeley.

Faculty Fellows

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Associate Dean for Undergraduate Programs; KPMG Les Fahey Faculty Fellow; Faculty Fellow, Institute for Sustainable Solutions; Professor of Business Administration. Ph.D. 1994 University of Utah.

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Vivek Shandas (2005) Ph.D.
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Bryant York (2004) Ph.D.
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Office of Vice President for

University Advancement

Françoise Aylmer (2010) M.A. CFRE
Vice President for University Advancement. M.A. 1974 Smith College. University Development

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Executive Director of University Advancement. B.A. 1977 Michigan State University.

Advancement Services

Amanda Jarman (2008) B.A.
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Theresa Bell (2007) B.S.
Associate Director of Annual Giving. B.S. 2011 Portland State University.

Stacy Schoo (2010) M.L.I.S.
Director of Research and Relationship Management.

Alumni Association

Tom Bull, M.S.C. (2011) M.A.
Executive Director of Portland State University Alumni Association. M.A. 2004 Northwestern University.

Mary Coniglio (2000) B.A.
Deputy Director. B.A. 1987 Creighton University.

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Development

Kristin A. Coppola (2009) B.A.
Associate Vice President for Development. B.A. 1990 American University.

Brian Federico (2010) M.B.A.
Director of Development, SBA. M.B.A. 2012 Portland State University.

Elizabeth Frawley (2011) B.A.
Regional Development Officer. B.A. 2009 Willamette University.

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Assistant Director of External Relations. M.P.A. 2013 Portland State University.

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Director of Development and External Relations, College of Urban and Public Affairs. M.B.A. 1996 Portland State University.

Tygue Howland (2012) M.Ed.
Director of Annual Giving and Special Events. M.Ed. 2012 University of Washington.

Debbie Hutchins (2001)
Director of Development for Viking Pavilion Campaign & Signature Events.

Jaymee Jacoby (2012) M.P.A.
Director of External Relations, Graduate School of Education. M.P.A. 2008 Portland State University.

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Director of External Relations, School of Social Work. M.S.W. 1998 Columbia University. M.A. 1998 Jewish Theological University.

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Scott Shlaes (2011) B.A.
Director of Development,

Sustainability Initiatives. B.A. 1998 College of Wooster.

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Library Development Director. M.A. 2007 Claremont Graduate University.

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Director of Development, Graduate School of Education. M.S. (1969) University of Wisconsin-Milwaukee.

Office of University Communications and Marketing

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Director of Web Communications. B.S. 1987 Santa Clara University.

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Director of Communications. Ph.D. 2003 Ohio University.

Julie Smith (2000) B.S.
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Director of Creative Services. B.A. 1986 University of Oregon.

Academic Faculty

College of the Arts

Barbara Sestak (1982) M. Arch.
Dean, College of the Arts; Professor of Architecture. M.Arch 1977 University of Washington.

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Associate Dean, College of the Arts; Professor of Theater Arts. M.A. 1996 University of London.

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Associate Dean, College of the Arts; Professor of Music (jazz). M.M. 1986 University of Miami.

School of Architecture Faculty

L. Rudolph Barton (1988) M.Arch.
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Corey Griffin (2009) M.Arch.
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Juan Heredia (2010) Ph.D.
Assistant Professor of Architecture. Ph.D. 2008 University of Pennsylvania.

Clive Knights (1995) M.Phil.
Director, School of Architecture, Professor of Architecture. M.Phil. 1988 University of Cambridge.

Margarette Leite (2008) M.Arch.
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Sergio Palleroni (2008) M.S.Arch.
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School of Art and Design Faculty

Kate Bingaman (2008) M.F.A.
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Harrell Fletcher (2004) M.F.A.
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Erik Geschke (2007) M.F.A.
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Art.

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Emeriti Faculty

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1961 University of Oregon.

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Faculty

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Guitar Performance. M.M. 1996
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Real Estate

Faculty

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Supply and Logistics Management

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Center for Executive and Professional Education

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Graduate School of Education

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Associate Dean for Outreach,
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Faculty

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