

University of Pittsburgh

**GRADUATE AND
PROFESSIONAL BULLETIN
2000 • 2003**

USING THIS BULLETIN

Students who are interested in or accepted to any of the University of Pittsburgh's graduate or professional programs other than those leading to the first-professional degrees offered by the University (MD, JD, LLM, PharmD, or DMD) will find useful most of the sections of this bulletin. Descriptions of the University, its regulations, and its services are included in the sections prior to the program-specific information in the Schools, Departments, and Programs section of the bulletin.

Students interested in first-professional programs (MD, JD, LLM, PharmD, or DMD) can ignore much of the bulletin prior to the First-Professional Programs section, but should familiarize themselves with the general information on the University, as well as the section on Campus Facilities & Student Services, and the University-wide policies detailed in Rights and Responsibilities. The Schools of Medicine, Law, Dental Medicine, and Pharmacy appear in the Schools, Departments, and Programs section for programs leading to the graduate and professional advanced degrees as well as in the First-Professional Programs section since these schools offer both types of programs. Faculty are listed by their department or program at the end of the school.

Students should note that the listings of requirements and procedures for admissions, registration, and other information listed in the sections prior to the more program-specific information provided in the Schools, Departments, and Programs section of this bulletin represent the minimum requirements and basic procedures. Students should consult the information on their specific school, program, and department for detail on additional or stricter requirements and procedures.

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UNIVERSITY OF PITTSBURGH



THE UNIVERSITY OF PITTSBURGH

ABOUT THE UNIVERSITY

The University of Pittsburgh is an internationally respected center of learning and research, offering exceptional educational opportunities in the humanities, sciences, and professions. The University's mission is to advance teaching, research, and public service. This tripartite commitment enables the University to serve others by:

- educating diverse students from the region, the nation, and the world;
- expanding the boundaries of knowledge, discovery, and technology; and
- enhancing quality of life in the western Pennsylvania region and beyond.

HISTORY

The University began in the Pennsylvania wilderness as the Pittsburgh Academy in 1787, the year the U.S. Constitution was adopted. Thirty-two years later, the Pittsburgh Academy became the Western University of Pittsburgh, and in 1908, the school changed its name to the University of Pittsburgh.

The recognition of graduate study at the University of Pittsburgh began with the awarding of Master of Arts degrees in 1836. By 1870, over 30 MA degrees had been awarded. These degrees were conferred for study beyond the Bachelor of Arts degree. In 1884, Chancellor Milton Goff set up a two-year professional study program leading to either a Master of Philosophy (predecessor of the Master of Science degree) or a Master of Arts degree and a three-year program leading to a Doctor of Philosophy degree. Before admission to these programs, each student was required to show proficiency in three areas of study. Both master's and doctoral candidates were required to prepare and defend theses.

In 1906, new rules were formulated for graduate study, requiring students to be in residence and requiring the completion of one year of study or 30 credits for the master's degree and three years or 90 credits for the doctoral degree. The catalogues of 1908 and 1909 announced the establishment of the Graduate School with five departments offering courses for the Doctor of Philosophy degree. These departments, plus five others, offered courses for the Master of Arts degree.

In 1910, a faculty committee drafted proposals, adopted by the board of trustees in 1913, making the Graduate School an independent administrative unit of the University and authorizing the selection of a Graduate Council. The Graduate School was grouped into three divisions (Humanities, Social Sciences, and Natural Sciences) in 1947. Until 1956, the administration of graduate study was the responsibility of the dean of the Graduate School and the Graduate Council. At that time, the individual schools and the three divisions were given direct administrative responsibility for their graduate programs in accord with the regulations established by the University Council on Graduate Study—formerly the Graduate Council. In 1968, the dean of the Graduate School retired from his administrative role, and the position he had held was discontinued. General responsibility for the

University's graduate programs was assigned to the provost pending reorganization of the University's graduate structure. The University Council on Graduate Study, the University administration, and members of the Graduate Faculty cooperated in drafting a proposed reorganization of graduate study, which was approved by written ballot by the entire Graduate Faculty and, in turn, accepted by Chancellor Wesley Posvar. This organizational structure became effective July 1, 1971 and is still the official structure.

Thus, during the 200-plus year history of the University, graduate education has grown to encompass the Faculty of Arts and Sciences and all 13 of the professional schools, which share a commitment to meet the nation's need for well-educated researchers, scholars, and leaders of professions and the tri-state region's need for trained professionals.

A private institution for most of its past, the University of Pittsburgh became state-related in 1966, establishing a relationship with the Commonwealth of Pennsylvania that continues to benefit both partners. Today, as an elected member of the prestigious Association of American Universities, the University of Pittsburgh claims its place among the top public research universities in the nation.

ACCREDITATION

The University of Pittsburgh, including its four regional campuses, is accredited by the Middle States Association of Colleges and Schools' Commission on Higher Education. In addition, schools, programs, and departments may be accredited by discipline-specific accrediting bodies. *See Schools, Departments, and Programs section of this bulletin for this information.*

ACADEMIC ORGANIZATION AND PITTSBURGH CAMPUS OVERVIEW

An independent, state-related, coeducational institution, the University of Pittsburgh's Pittsburgh campus offers a multitude of degree-granting and other programs housed in 16 undergraduate, graduate, and professional schools. The University system includes the Pittsburgh campus and four regional campuses at Bradford, Greensburg, Johnstown, and Titusville; the regional campuses offer undergraduate programs only.

More than 90 buildings are located on the Pittsburgh campus, which covers 132 acres in the culturally rich Oakland neighborhood. At the heart of the campus stands a central landmark—the Cathedral of Learning, a 42-story Gothic tower, which is the tallest school building in the western hemisphere. The Cathedral contains the remarkable Nationality Rooms: 26 classrooms, each of them designed to reflect a distinct culture.

On the Pittsburgh campus, over 3,400 faculty serve 25,900 students, including 9,100 graduate and 16,800 undergraduate students. Alumni accomplishments range from managing Fortune 500 corporations, to writing best-selling novels, to unlocking the secrets of DNA...and more.

The University of Pittsburgh remains a place of enduring tradition and vitality, true to the work ethic of western Pennsylvania, rich in intellectual rigor, and committed to preparing students for their lives and careers.

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WEB ADDRESS

For more information on the University of Pittsburgh, see the University's Web site at <http://www.pitt.edu/>.

ORGANIZATION OF GRADUATE AND PROFESSIONAL EDUCATION AT THE UNIVERSITY

While the University Council on Graduate Study (<http://www.pitt.edu/~graduate/ucgs.html>), acting for the Graduate Faculty, develops minimum standards for graduate work throughout the University, the immediate responsibility for developing and administering graduate programs is assigned to the deans and Graduate Faculty members of the several schools and the Faculty of Arts and Sciences. This responsibility applies both to the traditional MA, MS, and PhD

programs and to programs leading to advanced professional degrees, except for first-professional degrees (i.e., the MD, JD, LLM, PharmD, and DMD). The provost has responsibility for the general supervision of graduate and professional programs, including first-professional degree programs, throughout the University, giving leadership to the deans and faculties in maintaining high standards of instruction and research.

Faculty are appointed to the Graduate Faculty by the provost upon recommendation by the dean on the basis of an appraisal by the faculty of a department or other appropriate faculty group. Graduate Faculty are competent in graduate instruction and in supervision of student research at all levels and are active in advancing knowledge through their own research.

APPLICATION FOR ADMISSION

Graduate admissions to the University of Pittsburgh are handled by the particular graduate school or program; there is no central admissions office for graduate and professional schools at the University.

This section details only the University requirements and procedures for admission to the University. The Graduate Admissions Office of each school provides admissions information for prospective students to that school. *Schools' admissions requirements are listed under the Schools, Departments, and Programs section of this bulletin.*

The admissions information in this section is subject to change at any time. It is intended to serve only as a general source of information.

GRADUATE ADMISSIONS

Decisions regarding admission are based on an overall evaluation of all the credentials submitted by the candidate and in accord with the availability of faculty, facilities, and student support necessary to meet the applicant's expressed academic and research needs and interests. Many departments or programs have a limited number of places available. *Interested students should refer to the Schools, Departments, and Programs section of this bulletin in addition to the general admission information provided here.*

APPLICATION PROCEDURES

Students seeking admission should call or write for application forms and descriptive materials to the school or program of intended graduate study. In many cases, application materials are available online; prospective students are encouraged to check the Web site of their programs of interest. *See Schools, Departments, and Programs sections of this bulletin for contact information.*

Students should then return to the department or school the completed application forms and a check (not cash) for the application fee payable to the University of Pittsburgh. Generally, students applying online have the option of paying application fees online via credit card or by sending a check. The application fee is required of all applicants and is non-refundable; it does not apply toward the payment of tuition. *The fee varies from school to school, so prospective students should refer to the information on the relevant school in the Schools, Departments, and Programs section of this bulletin for the specific application fee required or go to that school's or department's Web site.*

Applicants must also request that the registrars of all undergraduate and any graduate schools attended send official transcripts of their records to the department or school of intended graduate study. In addition, many schools and departments require additional material. These materials may include any or all of the following: scores achieved on standardized examinations such as the Graduate Record Examination or the Graduate Management Admission Test, letters of recommendation, term papers written during previous study, evidence of work/life experience, evidence of motivation for graduate study, and a statement of career objectives. Applicants should arrange for a personal interview if requested by the department or school.

APPLICATION DEADLINES

See the Schools, Departments, and Programs sections of this bulletin for specific application deadlines, but note that students applying for fellowships and assistantships should file their applications at the earliest possible date. Applicants interested only in admission may be considered up to the deadline dates, but postponing applications may entail the risk that available spaces will be filled. Some programs admit students only for a particular term, so prospective students are encouraged to check with the school and program for specific admissions information.

GRADUATE ADMISSIONS OF INTERNATIONAL STUDENTS

Students from other countries should start the application process for admission nine to 12 months in advance of the date of intended enrollment and complete the process no less than three months before the registration date for the student's first term. Some schools may require even earlier applications. Applicants wanting to be considered for financial assistance must submit completed applications much earlier. Requests for application forms should be directed to the school in which the student wishes to enroll. All applicants should also take note of specific school and program requirements, such as the Graduate Record Examination (GRE scores). *Specific requirements are listed in the Schools, Departments, and Programs section of this bulletin.*

INTERNATIONAL STUDENT APPLICATION DEADLINES AND APPLICATION FEE

International students should contact the individual department or program to which they are applying to determine the required application deadlines for submitting a completed application, financial aid form, and application fee. Many programs have their application materials online via their Web sites. In general, international students should submit applications no less than three months before the term in which they want to begin taking classes. The deadlines and fees vary according to the school and program to which the student is applying. The fee must be submitted in the form of a check or money order made payable to the University of Pittsburgh. *See the individual school's international application information in the Schools, Departments, and Programs section of this bulletin for details or go to the school's or department's Web site.*

INTERNATIONAL STUDENT ACADEMIC BACKGROUND AND CREDENTIALS

The minimum requirement for admission to a graduate program is the completion of a bachelor's degree from an accredited institution in the United States or the completion of a level of education that the University of Pittsburgh deems comparable to a bachelor's degree from a regionally accredited U.S. institution.

Applicants are required to submit official original academic credentials. Official original academic credentials that are issued in a language other than English must be accompanied by a certified English translation. In addition, in cases where the grade reports, academic record, examination results, or transcript does not attest to the awarding of a degree or other academic qualification, a certified copy of the original certificate or diploma awarding the degree or qualification must be submitted. Certificates or diplomas that are

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issued in a language other than English must be accompanied by a certified English translation.

ENGLISH LANGUAGE PROFICIENCY REQUIREMENTS

Graduate students must possess sufficient proficiency in English to enable them to understand lectures, participate successfully in class discussion, and, in general, to be able to study without being hindered by language problems. To facilitate determination of proficiency, official results of the Test of English as a Foreign Language (TOEFL) are required if the applicant's native language is not English; this applies even if English has been the medium of instruction. A minimum score of 550 or higher on the TOEFL is required for admission to graduate study (or a TOEFL score of 213 on the computer-based test).

All students with a TOEFL score less than 650 (or 280 on the computer-based test) may be required by the department, program, or school to take the Michigan Test of English Proficiency upon arrival. Based on the test results, students may be required by their academic department to take courses in English as a foreign language before registering for graduate courses or may be required to take one or two such English courses in addition to graduate courses.

Any student scoring over 650 on the paper-based test (over 280 on the computer-based test) is exempted from further testing. The requirement to submit the results of the TOEFL may be waived if the applicant has recently received a satisfactory score on other tests of English language proficiency or has recently earned a degree from a regionally accredited institution in the United States.

The Educational Testing Service administers the TOEFL test at testing centers throughout the world. Students may take the test either in a traditional paper format or on a computer. Further information, testing dates, and test applications are available directly from the Test of English as a Foreign Language, Box 6151, Princeton, New Jersey, 08541, USA or by contacting a U.S. Consulate, an office of the U.S. Information Agency, an office of the U.S. Educational Commission, or a binational center. Information about the TOEFL is also available on the World Wide Web at <http://www.toefl.org/>. Applicants seeking September enrollment must take the TOEFL no later than the preceding March.

International students who are non-native speakers of English can contact the English Language Institute (ELI) on the University of Pittsburgh campus for assistance in meeting English proficiency requirements and taking the TOEFL. *See the Campus Facilities & Student Services section of this bulletin, page 9, for more information on the ELI.*

ENGLISH LANGUAGE FLUENCY FOR TEACHING ASSISTANTS/ FELLOWS

Teaching assistants (TAs) and teaching fellows (TFs) who are non-native speakers of English must be evaluated through a test designed to assess spoken English and English comprehension, approved by the Office of the Provost and administered by the English Language Institute (ELI). The Office of the Provost in consultation with ELI will establish minimum scores acceptable to permit a TA/TF to teach. Individual academic centers or departments may require higher scores than the established University minimums. All TAs/TFs with unsatisfactory scores on this test will be given non-teaching assignments and are required to take special course work until they attain a passing score. An unsatisfactory score at the time of reappointment is sufficient cause for nonrenewal of the student's TA/TF appointment. *See relevant school section in Schools, Departments, and Programs for more details.*

FINANCIAL SUPPORT AND VISA DOCUMENTS

While admission decisions are not based on financial support information, all applicants who are not U.S. citizens or Permanent Residents must submit a Financial Support Statement with their applications, even if applying for financial aid from the department. An award may not cover the entire cost of studies.

The Office of International Services cannot issue the document needed to apply for a student visa to enter the United States or to transfer non-immigrant status to the University of Pittsburgh until evidence of financial support adequate to cover the entire program of study has been submitted. Therefore, submission of a Financial Support Statement with an application will facilitate the issuance of a visa document.

ADDITIONAL INTERNATIONAL STUDENT REQUIREMENTS

The University of Pittsburgh reserves the right, even after arrival and enrollment, to make individual curricular adjustments whenever particular deficiencies or needs of a student are identified. In such instances, students may be required to take, at their own expense and without receiving credit, courses in English as a foreign language (*see English Language Proficiency Requirements above*) or courses prerequisite to their course of study to make up deficiencies.

It is strongly recommended that students arrive in Pittsburgh at least two weeks before the start of the term to allow sufficient time to make housing arrangements and take part in the orientation program conducted by the Office of International Services. In addition, the advising section of the Office of International Services, located in 708 William Pitt Union, offers assistance on a wide range of matters of concern to students from other countries. Call (412) 624-7120 or see <http://www.pitt.edu/~osaweb/ois/oisinfo.html> for more information.

ADMISSIONS STATUS

Admission may be granted or denied only by the dean of the school or his or her designee. However, non-immigrant students may be denied visa documents for non-academic reasons by the Office of International Services. Acceptable students are admitted to graduate study in a specific department or school with "full," "provisional," or "special" graduate status depending on their qualifications and objectives. The qualifications described below represent the minimum standards of the University. These may be made more stringent or specific at the option of the department or school.

FULL GRADUATE STATUS

For admission to full graduate status, an applicant must be a graduate of an accredited U.S. college or university and must be considered qualified for advanced study by the department or school. This normally is demonstrated by a B average (a quality point average of 3.00 on a 4.00 scale) or better in the total undergraduate program. (Note: the **Faculty of Arts and Sciences** requires a B average in the major field of study, and some of that school's departments require higher levels of achievement.) If students with less than a B average present alternative evidence (such as completion of an advanced degree or successful relevant work experience) of superior ability, they may be considered for full graduate status on the recommendation of the department of proposed graduate study. Only students with full graduate status may take the PhD preliminary evaluation, take the

MA/MS or PhD comprehensive examination, be considered for the award of an advanced degree or certificate, or be graduated.

PROVISIONAL GRADUATE STATUS

Applicants who are graduates of a recognized college or university but who do not qualify for admission to full graduate status because of deficiencies in either their undergraduate program or their scholastic achievement may be considered for provisional graduate status if strong supporting evidence of their ability to complete a graduate program is provided. Courses taken to remove deficiencies do not contribute toward completion of graduate degree requirements. Transfer from provisional to full graduate status is initiated and recommended by the department and is possible only after removal of deficiencies and other conditions noted at the time of admission and satisfactory progress in graduate work.

A student on provisional or special status or on probation is not eligible to take the PhD preliminary evaluation, to take the MA/MS or PhD comprehensive examination, or to be graduated.

SPECIAL STATUS

Students may be granted temporary admission as “special status” under the following circumstances:

1. Students who are seeking advanced degrees but who are unable to meet the deadline for filing all required credentials for admission may be granted temporary admission provided they present acceptable evidence concerning their qualifications for graduate study. Regular admission must be accomplished within the first term of registration.
2. Students who are not seeking an advanced degree but who have specific qualifications for one or more courses, including courses required for learning or certification, may register for such courses subject to review by the department and the dean of the school. Schools providing such an opportunity may specify the number of credits or courses for which a student may enroll while in this status and should also clearly specify the limitations on transfer of such credits toward a graduate degree if the student is subsequently admitted to a graduate degree program.

See Schools, Departments, and Programs section for specific requirements connected to special status students.

GUARANTEES AND EARLY ADMISSION TO GRADUATE AND FIRST-PROFESSIONAL PROGRAMS

Undergraduate students receiving an academic merit scholarship who indicate certain professional programs (including communication science, dental medicine, education, law, medicine, physical therapy, and public and international affairs) as their intended field of study on the Freshman Application to the University of Pittsburgh will be

automatically reviewed for guaranteed admission into that professional program. Early application is recommended, as spaces are limited.

Exceptionally able undergraduate University of Pittsburgh students may be admitted to full graduate status if their graduate and undergraduate schools have approved early admission as a permitted option and have established standards and procedures, and if the student needs no more than 24 credits to complete the baccalaureate degree. Credits earned while enrolled in the graduate program may also be counted toward fulfilling undergraduate degree requirements. *See Schools, Departments, and Programs section for further information on the possibility of early admission to specific programs.*

TUITION DEPOSIT

Once a student is admitted to a program, some of the graduate and professional schools at the University of Pittsburgh require a tuition deposit of \$100 to \$500 to secure the student's place in the incoming class. *Students should refer to Financial Issues: Tuition, Fees, Loans, & Scholarships, page 6, or to the admissions information for their specific school to determine the amount required for the tuition deposit.*

DEFERRED ADMISSION

If a department or school so approves, a student may defer admission for one year without having to complete any additional applications. If approved, the student is sent a new admission letter. Approval of a student's request to defer admission does not necessarily mean that any financial aid awarded is also deferred. *See Aid Deferrals, page 8, for more information on deferring financial aid.*

READMISSION

A student who has not registered for at least one credit or full-time dissertation study during a 12-month period will be transferred automatically to inactive status and must file an application for readmission to graduate study (and pay the application fee) before being permitted to register again. Inactive students cannot apply to graduate, nor take preliminary or comprehensive exams. Readmission is not automatic nor does it necessarily reinstate the student to the academic status enjoyed prior to becoming inactive. When readmitted, the student must be prepared to demonstrate proper preparation to meet all current admission and degree requirements. Readmission is automatic, however, for students who receive prior approval for a formal leave of absence.

CHANGING THE FIELD OF GRADUATE STUDY

A student already admitted to graduate study and desiring to change a major department of graduate study must file an application for such a change in the office of the dean or the department of the school the student wishes to enter. The application for admission to the new department will be evaluated in the same manner as an application from a new student.

FINANCIAL ISSUES: TUITION, FEES, LOANS, & SCHOLARSHIPS

TUITION

TUITION DEPOSIT

Some graduate and professional schools at the University of Pittsburgh require tuition deposits to secure the admitted student's place in the incoming class. These deposits are non-refundable and are applied toward the student's first term tuition costs. The schools that require deposits and the specific amounts are as follows:

<u>School</u>	<u>Amount</u>
Katz Graduate School of Business	
MBA Program	\$200
PhD Program	\$100
School of Dental Medicine	\$500
School of Health and Rehabilitation Sciences*	
MPT Program	\$250
School of Information Sciences	\$100
School of Law	
Due April 15	\$200
Due June 15	\$300
School of Medicine	\$100
School of Nursing (Anesthesia)	\$250
Graduate School of Public and International Affairs	\$200
Graduate School of Public Health	\$100

* NOTE: The other programs in the **School of Health and Rehabilitation Sciences** (MA, MS, and PhD) do not require a tuition deposit.

FULL TUITION

Graduate students enrolled for nine to 15 credits during the Fall and Spring Terms are considered full-time and pay a flat tuition rate. Students enrolled for one to eight credits are considered part-time and pay for individual credits. Students enrolled in the Summer Term also pay for individual credits, regardless of how many credits are taken (The **Katz Graduate School of Business** is an exception: full-time MBA students pay a flat rate in the Summer Term). See *Deferred Payments and Payment Adjustments sections below for information regarding tuition payment plans*.

Tuition rates are school specific. Students pursuing two degrees or a degree and a certificate simultaneously must list one as the primary academic program and may list the other as a secondary academic program on the registration form; students are billed at the tuition rate of the primary academic program. Please refer to the tuition rate for the school in which you are enrolled. The University's tuition chart is online at <http://www.ba.pitt.edu/irweb/tuition/tuithmpg.htm>.

RESIDENCY/REDUCED TUITION

Students who reside in the Commonwealth of Pennsylvania may be eligible for reduced tuition through state appropriations (*see Eligibility for Reduced Tuition below*). Eligibility is determined by criteria outlined in the *University of Pittsburgh Guidelines for Determining Eligibility for Reduced Tuition Rates*, available online at <http://www.bc.pitt.edu/sfs/paycenter.htm#TF>.

ELIGIBILITY FOR REDUCED TUITION

Assessment of full tuition or reduced tuition is based on whether the student is a permanent resident of the Commonwealth of Pennsylvania. Full tuition is charged to non-residents. A student who has lived in Pennsylvania for a continuous period of 12 months before enrollment in any institution of higher education in the state may be eligible for reduced tuition. The student must be a citizen of the United States or have an immigrant or permanent visa. For a student less than 21 years of age, both the student and parent(s) or legal guardian(s) must meet the residency requirements for eligibility.

FINANCIAL OBLIGATION OF STUDENTS

The University of Pittsburgh has the right to withhold services if a student defaults on any financial obligation until repayment arrangements have been made that are satisfactory to the office or department to which the debt is owed.

FEES

MANDATORY FEES

The following are mandatory fees assessed to students each term (current rates are available online at <http://www.ba.pitt.edu/irweb/tuition/tuithmpg.htm>):

- Student Activity Fee
- Student Health Fee
- Computer and Network Service Fee
- Security, Safety, and Transportation Fee

SPECIAL SERVICE FEES

These fees may be charged for University transactions that are processed beyond deadlines, due dates, and specified time limits.

COURSE FEES

Certain courses have fees associated with enrollment in the course. These courses are identified in the *Schedule of Classes and Course Descriptions*. The *Schedule of Classes* is online at <http://www.pitt.edu/~srfsweb/crinPgCrsInfo.htm>.

PROGRAM FEES

Certain graduate and first-professional programs have fees associated with enrollment in the program. These are typically fees for equipment or required insurance. See the *Schools, Departments, and Programs section of this bulletin for more information*.

FINANCIAL AID

Financial assistance for graduate students can be provided in the form of teaching and research appointments, fellowships, traineeships, tuition scholarships, and loans. The type of aid available depends on the school or program to which the student is admitted; students are encouraged to contact their school directly for more information about the types of financial assistance available. Admission to graduate study does not necessarily carry any implications concerning the award of financial aid.

TEACHING AND RESEARCH APPOINTMENTS

Students may receive financial support as teachers or researchers in their respective programs. In these positions, students are either teaching assistants (TAs), teaching fellows (TFs), graduate student assistants (GSAs), or graduate student researchers (GSRs). These appointments are generally for two terms at a time; guidelines covering these appointments and their current salary ranges are available through links from the University's Graduate Studies Web page at <http://www.pitt.edu/~graduate/>. In recognition of academic merit, the University offers TA/TF/GSA/GSR scholarships including tuition, fees (excluding the student activity fee), and individual medical insurance coverage. TAs/TFs/GSAs and GSRs can also purchase family medical coverage (for spouse and/or dependent children) by paying the difference between the premium costs for the individual option and the family option.

The University's policy concerning Teaching Assistants and Teaching Fellows, dealing with appointments, reappointments, terminations, benefits, and responsibilities, is contained in the *University TA/TF/GSA Policy Statement*, sent to all new Teaching Assistants. The University's policy concerning Graduate Student Researchers is contained in the *University GSR Policy Statement*, sent to all new GSRs. *The Teaching Assistant/Teaching Fellow/Graduate Student Assistant Policy Statement can also be found on page 28 of this bulletin under Rights and Responsibilities, and the University Graduate Student Researcher Policy Statement can be found on page 27.*

Students receiving these academic appointments must follow the relevant University policies as they apply to faculty and staff of the University of Pittsburgh; *see Rights and Responsibilities section of this bulletin for details.* For more information on what teaching and research positions may be available in a given program, *see the relevant information in Schools, Departments, and Programs.*

TEACHING ASSISTANTS (TA)

Teaching Assistants (TAs) are graduate students who have not qualified for an appointment as a teaching fellow. The duties of a TA might include teaching recitation sections, monitoring quizzes, assisting in laboratory instruction, or participating in related activities involving undergraduate programs. Full appointments usually require approximately 20 assigned hours per week.

TEACHING FELLOWS (TF)

Teaching Fellows (TFs) are graduate students more educationally advanced or experienced than a TA, typically holding the equivalent of a master's degree. The salaries for TFs are slightly higher than those for TAs. Full appointments usually require approximately 20 assigned hours per week.

GRADUATE STUDENT ASSISTANT (GSA)

Graduate Student Assistants (GSAs) are graduate students who perform duties to assist in the educational or research mission of the University, but do not teach classes, recitations, or labs. GSAs might assist a faculty member in library research, editorial duties, or similar academic tasks. Full appointments usually require approximately 20 assigned hours per week.

GRADUATE STUDENT RESEARCHER (GSR)

Research grants funded by government and private agencies provide a variety of full- and part-time research positions for graduate students. Most, but not all, of the GSR positions, which are also referred to as Graduate Research Assistants, are in projects that are directly related to the thesis or dissertation research of the student; all provide the student with valuable research training and experience.

FELLOWSHIPS AND TRAINEESHIPS

There are a variety of fellowships and traineeships available from the University of Pittsburgh and many other organizations that provide funding to students needing financial assistance and/or showing evidence of academic excellence. These awards may include a stipend, a tuition scholarship, health care coverage, or all three. Among the fellowships available from the University to students across a broad range of disciplines are the following:

PROVOST'S DEVELOPMENT FUND

This program is intended to provide financial support and development opportunities for women and disadvantaged students pursuing the doctorate or professional degree that would qualify them for an academic or administrative appointment. Financial assistance will be made available on the basis of need and merit. Any U.S. citizen or permanent resident who is enrolled in or admitted to a graduate program at the University is eligible. Ideally, the candidate would be in the advanced stages of the PhD program so that support for one year would complete the program. Applications are available from the Office of the Provost, 801 Cathedral of Learning, or online at <http://www.pitt.edu/~cedeno/pdfapp99.html>.

OWENS FELLOWSHIPS

A bequest of Samuel T. Owens Jr. makes fellowships available at the University of Pittsburgh for needy students who show promise of high academic achievement. These fellowships carry an annual stipend of \$2,000. The fellowships may be used in payment of tuition, books, and living expenses during the academic year for which the award is granted. Owens Fellowships are not available for a single term. Application forms are available in the University Office of Admissions and Financial Aid, Masonic Temple, Pittsburgh, PA 15260, (412) 624-7488. The deadline for application is usually in April.

For more information on specific fellowships and traineeships available to students in a particular program, see the Schools, Departments, and Programs section of this bulletin.

SCHOLARSHIPS

Scholarships from the University of Pittsburgh are a form of merit- and need-based financial aid. Outside scholarships are also applied toward tuition and other mandatory educational expenses. Scholarships do not have to be repaid.

STAFFORD LOANS

Stafford Loans are long-term, low interest rate loan programs available to degree-seeking students enrolled on at least a half-time basis. The amount of the loan is dependent upon financial need, but for a graduate student it could be as high as \$18,500 per academic year. While there is no deadline for applying, Stafford Loans can take as many as 60-90 days to be approved; therefore, students who intend to start graduate school in the Fall Term should start the loan process no later than May 15.

Financial aid application procedures are outlined in the University of Pittsburgh's *Financial Aid Booklet* and online at <http://www.pitt.edu/~oafa>. Information on Stafford Loans is available online at <http://www.finaid.org/loans/studentloan.phtml>; the University's Graduate Admissions and Financial Aid site (<http://www.pitt.edu/~graduate/admissions.html>) includes links to loan information for graduate students.

LIFETIME LEARNING TAX CREDITS

Taxpayers are eligible to claim a non-refundable Lifetime Learning Credit against their federal income taxes for the qualified tuition and related expenses of students who are enrolled in eligible educational institutions. Through 2002, the amount that may be claimed as a credit is equal to 20 percent of the taxpayer's first \$5,000 of out-of-pocket qualified tuition and related expenses for all the students in the family. After 2002, the credit amount is equal to 20 percent of the taxpayer's first \$10,000 of out-of-pocket qualified tuition and related expenses. Qualified tuition and related expenses for graduate-level education are eligible for the Lifetime Learning Credit.

For more information on Lifetime Learning Credits, see http://www.ed.gov/inits/hope/tax_qa/sec2.html.

DEFERRED PAYMENTS

AID DEFERRALS

Once students have applied for and been notified of financial aid eligibility, they may defer payments by obtaining a Financial Aid Deferral form in the Office of Admissions and Financial Aid and then submitting the form to the Student Payment Center. Whether a deferral of aid is allowed is dependent upon the type of aid awarded.

DEFERRED TUITION PAYMENT PLAN

Students in good financial standing with the University and registered during the Fall, Spring, or Summer Terms for three or more credits are eligible to participate in a deferred tuition payment plan to pay current term charges in three installments. First-time participants in the plan must make these arrangements in person at the Student Payment Center. Thereafter, participants may elect a mail option.

There is a \$20 fee each time a student sets up a payment plan, and an interest charge of 1% monthly on the unpaid principal is added to the remaining two installment payments. For more information on the deferred tuition payment plan, please contact the Student Payment Center via E-mail at payment@srfs.pitt.edu or online <http://www.bc.pitt.edu/sfs/paycenter.htm>.

PAYMENT

University statements may be paid by cash, check, or credit card; however, cash cannot be mailed or dropped into the Student Payment Center's depository. The University accepts Discover, MasterCard, and Visa credit card payments in person, by mail, or telephone. The Student Payment Center is located in room G-7 of Thackeray Hall. The mailing address is P.O. Box 371998, Pittsburgh, PA 15250-7998, and the phone number is (412) 624-7550.

Due dates are clearly designated on billing statements and are always the 17th of the month. Failure to pay the amount due (or to arrange a deferred tuition payment plan by the due date) will result in a late payment fee for students without a valid deferral.

If students who have a tuition scholarship (for example, via a TA/TF/GSR/GSA appointment) receive a tuition statement indicating that their tuition has not been paid, they should immediately contact the school or department administering the scholarship for assistance in correcting the error.

CHECK AND CREDIT CARD ADJUSTMENTS

As appropriate, payment made by check may be refunded to students. Adjustments to credit cards are made to the payer's credit card account and will be reflected on the Discover, MasterCard, or Visa monthly statement.

CAMPUS FACILITIES & STUDENT SERVICES

ACADEMIC RESOURCES

The University of Pittsburgh has a wide variety of academic resources that provide the infrastructure to aid students with their research and computing needs.

UNIVERSITY LIBRARY SYSTEM

271 Hillman Library

(412) 648-7710

E-mail: feedback@library.pitt.edu

Web site: <http://www.library.pitt.edu>

The University Library System (ULS) of the University of Pittsburgh is represented by 14 libraries located on the Pittsburgh campus, the Allegheny Observatory Library, the Archives Service Center, and a storage facility at UPARC in Harmarville. The ULS is a member of the Association of Research Libraries (ARL), the Oakland Library Consortium (OLC), and Pennsylvania Academic Library Connection, Inc. (PALCI). Through membership in several Pennsylvania consortia of libraries, cooperative borrowing arrangements have been developed with other Pennsylvania institutions.

Other University of Pittsburgh libraries include the Barco Law Library and the Health Sciences Library System (*see below for detail*), both located in Pittsburgh, as well as the four regional campus libraries—Bradford, Greensburg, Johnstown, and Titusville.

The University of Pittsburgh libraries and collections provide an abundant amount of information and services to the faculty, students, staff, administrators, and researchers of the University. In fiscal year 1999, the University's collections totaled nearly four million volumes, nearly four million pieces of microforms, and 26,000 subscriptions (these subscriptions include more than 24,000 print subscriptions and nearly 2,000 electronic journals). Also, through the Graduate and Professional Student Association (GPSA), interlibrary loan grants of up to \$25 a year are available to all graduate and professional students at the University to help offset the increasing costs of interlibrary loans between University of Pittsburgh libraries and those on other campuses. (*See <http://www.pitt.edu/~gpsa2/>.*)

Under the administration of the University Librarian, the University Library System (ULS) includes the following libraries and collections:

- Hillman (main), which houses:
 - African-American
 - Buhl (social work)
 - East Asian
 - Government Documents
 - Latin American Studies
 - Special Collections
- Allegheny Observatory
- Business Information Center
- Center for American Music
- Chemistry
- Computer Science

- Darlington Memorial
 - American History
- Engineering
- Fine Arts
- Information Sciences
- Langley
 - Biological Sciences
 - Neuroscience
 - Psychology
- Mathematics
- Music
- Physics/Astronomy
- Public and International Affairs/Economics

The Hillman Library is the largest library facility with seating for 1,530 users. It offers an open stack arrangement and an extensive range of library services. In addition to the main collection, which is comprised primarily of humanities and social sciences subject areas, the Hillman Library is comprised of seven other libraries and collections, maps, national, and international newspapers, and microform facilities.

PITTCAT is the University of Pittsburgh's online library catalog, offering author, title, subject, and keyword access to materials in all University libraries. PITTCAT currently contains bibliographic holdings and circulation information for more than three million titles, representing most of the book and periodical collections in all University libraries. In addition, the University libraries provide access to many remote resources for University of Pittsburgh faculty, students, and staff, including Digital Dissertations, EBSCOhost, InfoTrac, CIS Compass, MUSE, JSTOR, Science Direct, Web of Science, netLibrary, and numerous other electronic journals. PITTCAT and the other databases are available through the ULS Web site at <http://www.library.pitt.edu>.

BARCO LAW LIBRARY

The Barco Law Library, occupying three floors of the five-story Law School Building, is available to anyone needing to use its resources for legal research purposes. Likewise, the Government Document collection is available for use by the public at large. Call (412) 648-1323 for more information or see the library's Web site at <http://www.law.pitt.edu/library>.

HEALTH SCIENCES LIBRARY SYSTEM

The Health Sciences Library System (HSLs) at the University of Pittsburgh is comprised of three distinct libraries that support the educational, research, patient care, and service activities of the schools of the health sciences (**Medicine, Dental Medicine, Pharmacy, Health and Rehabilitation Sciences, Nursing, Public Health**) and the UPMC Health System. This library system includes the Falk Library, the Nursing Collection in the Learning Resources Center of the School of Nursing, and the Western Psychiatric Institute and Clinic (WPIC) Library.

Falk Library of the Health Sciences serves as the flagship of the HSLs. It is located on the second floor of Scaife Hall. The library houses

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more than 300,000 print volumes and receives approximately 2,000 journal subscriptions. The Falk Library collection also includes a special History of Medicine collection. In addition to the library's print collection, the Computer and Media Center (CMC) includes videotapes, audiotapes, more than 100 public computers, and over 300 microcomputer software packages.

WPIC Library is one of the world's most comprehensive resources in psychiatry and the behavioral sciences, with approximately 70,000 books, 420 journals, and 600 audio tapes. The WPIC Library collection also includes 550 videotapes held at the Benedum Audiovisual Center. The Nursing Library is located on the second floor of Victoria Hall and includes about 10,000 books and 150 journal titles.

HSL Online, a digital clinical library, offers access through the World Wide Web to current biomedical databases, full-text journals, major full-text clinical and subspecialty textbooks, clinical practice guidelines, and current drug and toxicology information. HSL Online includes the following databases and information services: MEDLINE, AIDSLine, CancerLit, Bioethicsline, HealthStar, CINAHL, PsycINFO, Evidence-Based Medical Reviews, Micromedex, MDConsult, STAT!Ref, Harrison's Principles of Internal Medicine, Lippincott's Primary Care Online, and Scientific American Medicine Online.

For information about the Health Sciences Library System and its resources, or to access HSL Online, see <http://www.hsls.pitt.edu/>, or E-mail medlibq+@pitt.edu.

COMPUTING SERVICES AND SYSTEMS DEVELOPMENT

CONTACT INFORMATION

728 Cathedral of Learning
Phone: (412) 624-4357
Web site: <http://technology.pitt.edu/>

Computing Services and Systems Development (CSSD) is the comprehensive service center for the University of Pittsburgh's computing support and systems development environment. A number of those services provided by CSSD are detailed below. For a full discussion of CSSD's services, consult the Web page listed above.

CAMPUS COMPUTING LABS

CSSD operates six primary computer labs on the Pittsburgh campus, providing students with access to Intel, Macintosh, and UNIX workstations and an array of software applications needed to fulfill the demands of students' academic endeavors. The six computing labs are located at 1077 Benedum Hall, G27/G62 Cathedral of Learning, 1E01 Posvar Hall, First Floor Hillman Library, 230 David Lawrence Hall, and C114 Sutherland Hall. The 230 David Lawrence Hall lab is open 24 hours a day, seven days a week. For hours of operation for all campus computing labs, please call (412) 624-5061.

NETWORK AUTHORIZATION ACCOUNTS

All enrolled students are eligible for a network authorization account (NAA). The NAA will permit a student to establish a user ID and a password to provide access to the University's network resources, a Mulberry E-mail account, the Internet/WWW, the University Library System's PITTCAT system, and a printing allowance at the campus computing labs. All students who wish to use the University computing resources, including the ability to access their schedules and grades online or to shop at the e-Store, must have a network authorization account. Accounts are issued at any of the campus computing labs. Password re-set and other account modifications must be made

between 8:30 a.m. and 5:00 p.m. at the Accounts Office at the 230 David Lawrence Hall lab. Please contact the CSSD Help Desk at (412) 624-HELP (624-4357) for assistance with accounts.

NETWORK PORT CONNECTIVITY

Students can access the University's network from home with their network authorization account and a modem through the remote access modem pool. Please contact the CSSD Help Desk at (412) 624-HELP (624-4357) for assistance.

COMPUTER CONSULTING SERVICES

CSSD has a staff of skilled information technology (IT) professionals who are available to help troubleshoot problems 24 hours a day, seven days a week. CSSD consultants are available to help with problems such as network connectivity, software difficulties, or even hardware malfunctions. Please call the CSSD Help Desk at (412) 624-HELP (624-4357) for assistance.

COMPUTER SALES AND DIGITAL CERTIFICATION

University of Pittsburgh students, faculty, and staff have access to the e-Store, an online retail provider of hardware, software, and peripherals, for their computing needs. Shopping at the e-Store requires a network authorization account and a digital certificate ID. Please see the e-Store's Web site at <http://e-Store.pitt.edu/> for University-recommended computer systems and for instructions on obtaining a digital certificate. Call the CSSD Help Desk at (412) 624-HELP (624-4357) for more information.

COMPUTING WORKSHOPS AND TRAINING

CSSD offers Quickstart classes, a series of short courses designed to orient new and experienced users to the University's network, the Mulberry E-mail environment, and the selection of software applications available in the campus computing labs. CSSD also offers a selection of Java and Microsoft certification courses for students. For additional information and a schedule of classes, please see the CSSD Workshop site at <http://www.pitt.edu/~workshop> or call the CSSD Help Desk at (412) 624-HELP (624-4357).

NETWORK SERVICES

The Network Services area of CSSD is responsible for the development and maintenance of the University's information technology network supporting voice, video, and data. The backbone of the University-distributed computing services is PittNet, a network based on Ethernet technology that serves the diverse communications needs of the entire University community. For additional information, please see the Network Services site at <http://technology.pitt.edu/network/index.html> or call (412) 624-4357.

RESEARCH AND ACADEMIC SUPPORT

A number of centers at the University support teaching, research, and academic skills for graduate students in a variety of fields. Those centers are detailed below in alphabetical order.

CENTER FOR BIOTECHNOLOGY AND BIOENGINEERING

The Center for Biotechnology and Bioengineering is a leading center for research in biology and bioengineering. The center's headquarters, a new 80,000 square foot building located in a high-technology business park near the University, houses 100 researchers actively pursuing projects in the center's main programs in applied enzymology, cell culture, biomaterials, gene therapy, and artificial organs. The center's goals include training new generations of scientists; accelerating the process of innovation in biotechnology and

bioengineering; and providing assistance to the industrial community through industrially supported applied projects.

For more information on the center, call (412) 383-9700 or see the center's Web site at <http://www.pitt.edu/~biotech/>.

CENTER FOR INSTRUCTIONAL DEVELOPMENT & DISTANCE EDUCATION (CIDDE)

The Center for Instructional Development & Distance Education (CIDDE) was established to strengthen the instructional development and support services available to faculty and teaching assistants. The Center enables faculty to identify and use technology and other instructional resources available to them.

CIDDE provides faculty and teaching assistants with a primary contact point for many of the instructional services they need, and it also assists in developing and supporting distance education programs and courses. CIDDE also hosts an orientation for new TAs each fall and provides ongoing training seminars for teaching assistants wanting to develop their teaching skills. For more information, visit CIDDE at 4227 Fifth Avenue (Masonic Temple), call (412) 624-3335, or visit CIDDE's Web site at <http://www.pitt.edu/~ciddeweb/>.

CENTER FOR PHILOSOPHY OF SCIENCE

The Center for Philosophy of Science promotes scholarship and research, encourages scholarly exchanges, and fosters publications in the philosophy of science as well as in the philosophically informed history of science and related fields. The center is dedicated to bridging the gulf between the sciences and the humanities by helping to develop and disseminate a philosophical understanding and appreciation of the sciences. The center pursues its mission not only locally and regionally, but also nationally and internationally. The center sponsors a visiting fellows program, an annual lecture series, a number of colloquia and workshops, and a variety of other programs. Like other centers at the University of Pittsburgh, the Center for Philosophy of Science is a unit for research rather than teaching. For more information on the center, visit the center in room 817 of the Cathedral of Learning, or on the Web at <http://www.pitt.edu/~pittcntr/>.

ENGLISH LANGUAGE INSTITUTE

The English Language Institute (ELI) provides credit-bearing English as a Second Language (ESL) courses for students admitted to the University's degree programs, as well as intensive instruction in ESL for people who need to meet proficiency requirements to enter a university. Credit courses are offered in speaking, writing (including the research paper), and reading/vocabulary. Through the **School of Engineering**, a technical writing for ESL graduate course is provided. During the summer, the ELI offers five-week ESL programs for students entering MBA and MPIA graduate programs. Non-credit courses cover reading, writing, listening, speaking, and grammar. For more information, call (412) 624-5901, E-mail elipitt+@pitt.edu, stop by room 2816 Cathedral of Learning, or visit the Institute's Web site at <http://www.eli.pitt.edu>.

INSTITUTIONAL REVIEW BOARD

The Institutional Review Board (IRB) is charged with overseeing and approving all research at the University involving humans as subjects. For more information on the IRB's policies and practices, call (412) 692-4370 or see the IRB's Web site at <http://www.ofres-hs.upmc.edu/irb/irb.htm>.

LEARNING RESEARCH AND DEVELOPMENT CENTER (LRDC)

The Learning Research and Development Center (LRDC) is a multidisciplinary research center whose mission is to understand and

improve learning by children and adults in the organizational settings in which they live and work: schools, museums, and other informal learning environments, and workplaces.

Fields of research include: processes of learning; learning in schools and museums; education improvement; education policy and practice; learning and technology; and learning and work. For more information, visit the center's Web site at <http://www.lrdc.pitt.edu>.

LEARNING SKILLS CENTER

The Learning Skills Center (LSC) offers free learning support services for University of Pittsburgh students, staff, and faculty. The math component provides tutoring for the University's introductory math courses and individual consultation for improving study strategies and confidence in math. Individual and group study skills services are available through the study skills component. In the study skills workshop, students learn, discuss, and practice strategies for improving textbook reading, lecture note taking, memory, time management, and test performance. Individual appointments can also be made for general study skills, for suggestions on how to study specific subjects, or for help in reducing test anxiety.

Supplemental Instruction groups are conducted by the LSC for traditionally difficult introductory courses to give students the opportunity to learn and practice effective study strategies while studying the content of the course. The reading component provides diagnostic services, individualized programs in comprehension and vocabulary, and speed reading workshops.

For more information, contact the center at (412) 648-7920, room 311 William Pitt Union (open Monday through Friday from 8:30 a.m. to 5:00 p.m. and some weekday evenings), or see <http://www.lsc.pitt.edu>.

OFFICE OF MEASUREMENT AND EVALUATION OF TEACHING (OMET)

The Office of Measurement and Evaluation of Teaching (OMET) provides services to the University community related to student evaluation of teaching, the scoring of objective classroom tests, the administration of paper-and-pencil and computer-based admission and certification examinations, and consultation regarding research design and analysis. Instructors teaching a class, lab, or recitation can receive student feedback about their teaching by completing a request form that is available in both their respective departments and in G-39 CL (call 624-6147 for information). Information about test scoring and administration is available in G-33 CL (call 624-6440). OMET's Web site is located at <http://www.pitt.edu/NewPittInfo/omet.html#stu>.

OFFICE OF RESEARCH

The Office of Research is charged with administrative responsibility for all University research and related activities involving extramural sponsorship. The Office of Research serves as both a center of advocacy for research and related activities and a facilitator of the research environment. The functional areas supported by Office of Research staff include information services on potential sources of funding, project and proposal development assistance, and grants and contracts administration for both pre-award and selected post-award tasks. All funding proposals submitted by University personnel must be transmitted to and reviewed by Office of Research staff to assure adherence to internal and external policies and procedures. For more information on the office's services, call (412) 624-7400, visit 350 Thackeray Hall, or see <http://www.pitt.edu/~offres/>.

UNIVERSITY CENTER FOR INTERNATIONAL STUDIES (UCIS)

The University Center for International Studies (UCIS) is the central coordinating and support mechanism for the international activities of the University of Pittsburgh. As a University-wide center, UCIS supports multidisciplinary programs of research and instruction in international and area studies, linking departments and schools of the University. It connects the University with private and public sector institutions, other universities, and institutions in other countries to strengthen the University's international dimension of teaching, research, and public service. UCIS aids students in their acquisition of international knowledge through certificate programs, study abroad programs, curriculum developments, and seminars; assists faculty in their international research, teaching, and service; and develops and manages international programs and projects. The center offers graduate certificate programs through its four area studies centers (Asian Studies, Latin American Studies, Russian and East European Studies, and West European Studies), all of which are designated by the federal government as National Resource Centers. Area studies certificates give evidence of language proficiency and area knowledge, which students find useful for international careers or for advanced degrees with a focus in a particular world area.

For more information, contact UCIS at 4G Posvar Hall, (412) 648-7390, or <http://www.ucis.pitt.edu/index.html>.

UNIVERSITY CENTER FOR SOCIAL AND URBAN RESEARCH (UCSUR)

Established in 1972 to carry out basic and applied social science research, the University Center for Social and Urban Research (UCSUR) is a focal point for collaborative interdisciplinary and multidisciplinary studies. Faculty from the University's **Faculty of Arts and Sciences** and the professional schools participate in UCSUR's research programs. More than 60 federal, state, and local agencies, and foundations support the basic and applied research of the Center.

UCSUR is the major survey research facility at the University of Pittsburgh. The center provides opportunities for faculty collaboration in the development of research projects. It also provides state-of-the-art survey research facilities and other services to assist in formulating and executing research projects; information and technical services for local governments, community groups, and educational institutions; and primary and secondary data acquisition and analysis.

UCSUR is a Pennsylvania State Data Center research affiliate responsible for helping local academic institutions, businesses, governments, and other organizations in Southwestern Pennsylvania access and analyze U.S. Bureau of the Census data.

For more information on UCSUR, call (412) 624-5442 or see <http://www.pitt.edu/~ucsur/>.

WRITING CENTER

The Writing Center, located in the University's English department, offers tutoring assistance for students who need help with their writing in any class. Tutors will help solve writing problems with students but will not edit or write text. Students may drop in any time, but it is best to call for an appointment. The Writing Center is open Monday through Friday and also has some evening hours. For more information, call (412) 624-6556, stop by room 501 Cathedral of Learning, or see <http://www.pitt.edu/~englweb/writecent.html>.

SERVICES FOR NEW TEACHING ASSISTANTS

The University has a variety of support mechanisms for new teaching assistants to help them develop and improve their teaching skills. Each fall, the Center for Instructional Development & Distance Education (CIDDE) hosts an orientation for new TAs. The program includes required workshops led by experienced TAs and faculty on promoting academic integrity and creating an inclusive classroom. Elective workshop topics address issues such as teaching in labs, teaching recitations, and dealing with difficult situations. A panel of professors and students describe the University's undergraduate population to new TAs. For registration information, call (412) 624-6671. CIDDE also publishes a Teaching at Pitt handbook that includes helpful information for new TAs.

Also, CIDDE and the Office of Measurement and Evaluation of Teaching (OMET) provide further training and evaluation for teaching assistants (*see above for detail on CIDDE and OMET*).

HOUSING

Pittsburgh has a number of pleasant residential neighborhoods with private homes that have been converted to apartments. Many graduate and professional students live in Oakland, where the University is located, or in the surrounding neighborhoods of Shadyside, Squirrel Hill, Highland Park, and Mount Washington. All of these areas are within walking distance or easy commuting distance of the University. Public bus transportation is widely available and is free (inside Allegheny County limits) to University students.

Ruskin Hall is the only residence hall on campus for graduate students. It is designated as living space for graduate students studying medicine, law, or other health-related professionals. Students interested in Ruskin Hall should contact the Property Management Department (*see below*).

HOUSING RESOURCE CENTER

The Housing Resource Center provides assistance to students, staff, and faculty in identifying, renting, leasing, or purchasing suitable living accommodations. The Housing Resource Center provides the following: information on University-owned apartments; an apartment-roommate matching service; a sublet service; maps of Pittsburgh and surrounding areas; rental tips; campus shuttle schedules; free local telephone service to contact landlords; and listings of apartments inspected and approved by the City of Pittsburgh. Call (412) 624-6998, visit the office at 127 North Bellefield Street, or see <http://www.pitt.edu/~property/hrc.html>.

PROPERTY MANAGEMENT

The Department of Property Management manages several off-campus apartment buildings near the University for students, faculty, and staff. For more information on the buildings and how to make a rental application, call (412) 624-9900, visit the office at 127 North Bellefield Avenue, or see <http://www.pitt.edu/~property/pm.html>.

STUDENT RESOURCES

The University is committed to providing a high quality of life for its students and towards that end supports a variety of offices and activities designed to aid students in realizing their potential and having a fulfilling campus life.

AFFIRMATIVE ACTION

In addition to its work with developing, implementing, and monitoring the University's affirmative action program, the Office of Affirmative Action is responsible for receiving, investigating, and mediating complaints from any members of the University community who believe they have been discriminated against or harassed on the basis of their race, color, religion, national origin, ancestry, sex, age, marital status, familial status, sexual orientation, disability, or status as a disabled veteran or a veteran of the Vietnam era. Individuals may request information and advice anonymously if they wish. The privacy of all parties will be respected. The office is located in room 901 of the Cathedral of Learning and the phone is (412) 648-7860. See <http://www.hr.pitt.edu/general/Affirm.htm> for further information on the office's services and the University's affirmative action policy.

ATHLETICS

The University offers a variety of opportunities for students to participate in athletics on the intramural and club levels as well as on-campus facilities for group sports and individual exercise.

VARSITY SPORTS

The University offers nine varsity sports each for men (baseball, basketball, cross country, diving, football, soccer, swimming, indoor and outdoor track, and wrestling) and women (basketball, cross country, diving, gymnastics, soccer, swimming, tennis, indoor and outdoor track, and volleyball). For tickets, scheduling, or other information about these sports, call (412) 648-8200 or visit the Pittsburgh Panthers Web site at <http://www.pittsburghpanthers.com>.

INTRAMURAL AND CLUB SPORTS

New outdoor playing fields are available behind the renovated Cost Sports Center. Call (412) 648-8210 for more information or visit the intramural program's Web site at <http://www.pitt.edu/~soeforum/hpred/intramurals/Imexperi.html>.

Sports clubs offer participation in a wide array of sports such as cycling, crew, hockey, and rugby. Contact the Student Organization Resource Center at 119 William Pitt Union, (412) 624-7116 for a complete list of sports clubs, or visit the club site at <http://www.education.pitt.edu/intramurals/>.

SPORTS FACILITIES

There are a variety of sports facilities available for use by individuals and groups. In Trees Hall, there are two swimming pools (call 412-648-8210 for pool information), a weight room, and courts for basketball, racquetball, handball, and squash. The Fitzgerald Field House also has two basketball courts and a 220-yard indoor track (call 412-648-8213 for schedule of available times). The Cost Center has nine indoor tennis courts, and fitness centers are available at Bellefield and Lothrop Halls. Bellefield Hall also has a swimming pool. The new Convocation and Events Center, scheduled to open on the Pitt Stadium site in 2001, will house a large student recreation and fitness center, among other amenities.

BOOK CENTERS

The University owns and operates two bookstores on campus: the Book Center and the Health Book Center. The Book Center, located at 4000 Fifth Avenue, carries textbooks for most University courses, as well as a general book selection, school supplies, and sundries such as art supplies, stationery, greeting cards, and calendars. Call (412) 648-1455 or see <http://www.pitt.edu/~bookctr/> for more information. The Health Book Center, located at 3527 Forbes Avenue, carries all course books for the **Schools of Medicine, Dental Medicine, Health & Rehabilitation Sciences, Nursing, Pharmacy, and Public Health**. Call (412) 648-8915 or see <http://www.pitt.edu/~bookctr/hbc.htm> for more information.

CHILD CARE

The University Child Development Center provides care and early childhood education to children of faculty, staff, and students of the University of Pittsburgh. Children range in age from six weeks through six years and participate in a wide range of programs that include full- and part-time infant, toddler, and preschool options and full-day kindergarten. There is a school-age summer program as well. The center serves the University as a laboratory school and the greater community as a model of early childhood excellence. There is a lengthy waiting list and prospective parents are encouraged to put children on that list as soon as possible. It is acceptable to put an unconceived child on the list in the interest of prudent planning. The Center is located at 635 Clyde St. and is open from 7:00 a.m. to 6:00 p.m., Monday through Friday. For more information, call (412) 383-2100 or see <http://www.hr.pitt.edu/ucdc/child.html>.

COUNSELING CENTER

The University Counseling Center provides free, confidential services to all students. The staff consists of psychologists, psychiatrists, and career counselors. Services include individual counseling, group counseling and the Career Resource Center. Students may come to the center for assistance with problems of an emotional, social, marital, academic, or career nature. The Center is located in room 334 of the William Pitt Union and is open year-round from Monday through Friday from 9 a.m. to 5 p.m., with additional hours from 6:00 p.m. to 9:00 p.m. on Monday nights during the Fall and Spring Terms. Call (412) 648-7930 for an appointment or see <http://www.pitt.edu/~counsel> for more information.

DISABILITY RESOURCES AND SERVICES

The Office of Disability Resources and Services (DRS) provides a broad range of support and services to assist students with disabilities. Services include, but are not limited to, the following: tape-recorded textbooks, sign language interpreters, adaptive computer technology, Braille copy, and non-standard exam arrangements. DRS can also assist students with accessibility to campus housing and transportation. Contact the DRS at (412) 648-7890 (voice or TDD) in room 216 of the William Pitt Union, or see <http://www.pitt.edu/~osaweb/drs/drs.html> for more information.

FOOD SERVICES

The Department of Food Services operates several cafeterias and food courts on campus and administers a meal plan for students, including graduate and professional students. Cafeterias or food courts are located in the following University buildings: Tower A, Tower C, William Pitt Union, Cathedral of Learning, Sutherland Hall, Mervis

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Hall, Benedum Hall, and Posvar Hall. Call (412) 648-2164 or see <http://www.pitt.edu/~food/> for more information.

The University of Pittsburgh Medical Center also operates a cafeteria on the 11th floor of Scaife Hall.

HEALTH CARE AND STUDENT HEALTH SERVICE

All full-time students pay a Student Health Fee each term to cover a variety of services at the Student Health Service, which is located in Suite 500, Medical Arts Building, 3708 Fifth Avenue. The Student Health Service is a multi-service healthcare facility that offers outpatient clinical services, gynecology, and family planning, as well as comprehensive health education programs. Call (412) 383-1800 or see <http://www.pitt.edu/~studhlth> for more information.

The University of Pittsburgh Pharmacy, located in the same suite as the Student Health Service, offers over-the-counter and prescription medication, often at lower prices than available elsewhere. Call (412) 383-1850 or see <http://www.pitt.edu/~pittrx> for more information.

Students should have health insurance to protect themselves in the event of illness or injury. Also, some schools may require students to carry insurance as a condition of their enrollment, particularly when students may be in contact with blood-borne pathogens. A direct pay medical insurance plan, underwritten by MEGA Life and Health Insurance Company, is available to students registered at the University for three or more credits. While not a full-coverage plan, this plan is designed to provide a student's basic health care needs, including services not offered at the Student Health Service such as hospitalization and emergency care. Students may enroll in the MEGA plan only during certain enrollment periods. Applications, enrollment deadlines, and further information on the plan are available at the Student Health Service, Suite 500, Medical Arts Building, 3708 Fifth Avenue, Pittsburgh, PA 15260, (412) 383-1800, or by contacting the Office of Risk Management at (412) 624-0621.

Teaching Assistants, Teaching Fellows, Graduate Student Assistants, and Graduate Student Researchers with eligible academic appointments are currently eligible to enroll in a managed care plan. The University will cover the cost of this insurance for these eligible graduate students. Coverage is available for eligible spouses and dependents by paying the difference between the individual and dependent options through a monthly payroll deduction. Students supported by fellowships and traineeships may be eligible to purchase membership in this insurance plan by paying the full cost of the coverage through a monthly deduction.

ID CENTER

Every student, faculty, and staff member at the University must get an ID card from the ID Center, located in room 107 McCormick Hall. The PittCard is used to access a variety of campus buildings and to take advantage of on-campus services, including libraries, computer labs, student discounts, and the like. The card also affords access to off-campus benefits such as free bus rides on Port Authority Transit (*see Parking and Transportation*).

To obtain a PittCard, students must have registered for classes, and must present some form of photo identification, such as a driver's license or passport. If a student does not have any photo identification, several forms of signature ID, such as credit or bank cards or a social security card must be presented. Students may also use a birth certificate as a form of non-photo identification.

There is no charge for the initial PittCard. However, there is a \$20 replacement fee for lost, stolen, or damaged cards. Call (412) 624-7643 (624-7632 after hours) or see <http://www.pitt.edu/~idcenter/index.html> for more information.

INTERNATIONAL SERVICES

The Office of International Services provides services on matters relevant to international students and scholars. Among the services provided are the evaluation of foreign academic credentials for applicants to the University of Pittsburgh with education outside the United States; the issuance of visa documents; orientation for new international students; counseling on personal, social, and financial matters; information and advising on regulations of the Immigration and Naturalization Service and other government agencies, as well as the processing of documents for enrolled international students for travel and employment. To contact the Office of International Services, phone (412) 624-7120, fax (412) 624-7105, or E-mail ois@pitt.edu. The office's mailing address is Office of International Services, 708 William Pitt Union, University of Pittsburgh, Pittsburgh, PA 15260-5071.

PARKING AND TRANSPORTATION

The University provides a variety of parking and transportation services, both on and off campus, some of which are detailed below. For more complete information, call the University Department of Parking, Transportation, and Services' 24-hour hotline at (412) 624-8800 or see <http://p-and-t.parktran.pitt.edu/>.

PARKING SERVICES

A limited number of parking permits are available for graduate and professional students living in Ruskin Hall and for those students who commute from off-campus. Permits are sold on a first-come, first-served basis. Daily student commuter parking is also available in several lots located throughout the campus. No permit is required for these facilities; charges are based on daily or hourly rates. Commuter students may also purchase parking permits at the Center for Biotechnology and Bioengineering, an off-campus lot connected to main campus by a shuttle. Evening/weekend student parking permits are available to those who do not need to park until after 3:50 p.m. on weekdays. For more information, contact the Parking Office, 204 Brackenridge Hall, (412) 624-4034.

RIDESHARING

Daily commuter students can save money by sharing a ride with other students. A free, computerized matching service is available to find names and phone numbers of others interested in sharing a ride. Call (412) 624-0687 for more information.

PITTSBURGH CAMPUS TRANSPORTATION SYSTEM

University of Pittsburgh students may ride all of the Pitt buses and shuttles for free by showing a valid University ID. In addition, students are permitted two guest riders (space permitting). Buses and shuttles normally have a 25- to 35-minute route. Detailed maps and time schedules are available in the lobbies of many campus buildings, libraries, and residence halls.

VAN CALL

An on-call Van Call is available from 7 p.m. until 3 a.m. Sunday through Wednesday, and from 7 p.m. until 5 a.m. Thursday through Saturday, to transport students from campus to a residence or from a residence to campus. This service is only available for those not on a fixed shuttle route and within the following area around the campus: South—Second

Avenue/Center for Biotechnology and Bioengineering parking; North—Baum Boulevard; West—Robinson/Craft Avenue; and East—Morewood Avenue. Van Call will also pick up students at the downtown Greyhound bus station on Sundays only. Students may call (412) 624-1700 to have the on-call van dispatched to their location.

PORT AUTHORITY

University of Pittsburgh students may ride any Port Authority bus, incline, or trolley within Allegheny County for free by showing their valid University ID card. Port Authority bus schedules are available at the Transportation Office in Forbes Pavilion, the Parking Office at Brackenridge Hall (room 204), and in the lobby of the William Pitt Union.

BICYCLE REGISTRATION PROGRAM

Registration of bicycles is recommended as a deterrent to theft, to help in the identification of lost or stolen bicycles, and to help the Department of Parking, Transportation, and Services better accommodate cyclists at the University. Registration is free. Bicycle rack parking is also free. Bicycle parking maps, regulations, and safety tips are available from the department. Bicycle lockers may be rented for \$40 per term, plus a \$10 refundable locker key deposit. Call (412) 624-0687 for more information.

PITT ARTS

PITT ARTS is a program designed to provide the University's students with access to and information about the many cultural institutions in Pittsburgh. The program's Web site gives information about a wide range of events in music, film, theater, visual arts, lectures, museums, and other cultural programming both on campus and in the city at large; it also provides information about volunteering for different cultural organizations in the city. PITT ARTS has programs designed for both resident and commuting students, including providing free access during the Fall and Spring Terms for all University students with a valid ID to several museums in Oakland: Phipps Conservatory and the Carnegie Museums of Art and Natural History.

PITT ARTS and the Department of Parking, Transportation, and Services also sponsor the Cultural Bus for the convenience of Pitt students every Sunday through the Fall and Spring terms. The Cultural Bus (number 17U) departs from the William Pitt Union, on Bigelow Boulevard, beginning at 12:00 noon. The 17U Cultural Bus takes students to some of Pittsburgh's key cultural destinations, including the Andy Warhol Museum, Heinz Hall, the Senator John Heinz Regional History Center, the Mattress Factory, and the Carnegie Science Center. Schedules are available at the William Pitt Union Parking Office (204 Brackenridge Hall), and Transportation Office, 3525 Forbes Avenue, and online at the Parking and Transportation Web site: <http://p-and-t.parktran.pitt.edu/>.

For more information, visit PITT ARTS at <http://www.pitt.edu/~pittarts/>.

PLACEMENT SERVICE

Graduate and professional students should consult with their faculty mentors as well as departmental, program, or school placement services as their primary source for guidelines on career development specific to their discipline. As a secondary resource, the University Placement and Career Services, though mainly designed to assist undergraduates, has a variety of services that may be of use to graduate and professional students.

Placement and Career Services is designed to work with students at each step of the Pitt Pathway, a developmental model for career planning and implementation. Specific services that assist students in implementing their plan and beginning their job search include an on-campus recruiting program, a resume referral service, current job postings posted on the Web site and on job boards, and use of an alumni volunteer database entitled AlumNet. Placement and Career Services helps students establish contact with employers in the fields of business, government, health care, education, industry, and private research. A credential service maintains letters of recommendation files that are sent at the request of the student to prospective employers and graduate schools. PCS also maintains a part-time/summer job database for students interested in temporary or part-time work on and off campus. For more complete information on services provided by Placement and Career Services call (412) 648-7130, stop by room 224 William Pitt Union, or see <http://www.placement.pitt.edu>.

PUBLIC SAFETY

The Department of Public Safety provides police and security services to the University community. For emergency calls dial 811 from on-campus phones or (412) 624-2121 from off-campus phones. The University of Pittsburgh Police Department's main headquarters is located in G1N30 Posvar Hall. For general information calls (non-emergency), dial (412) 624-4040. For more information on the Department of Public Safety, see <http://www.pitt.edu/~police/>.

SEXUAL ASSAULT SERVICES

The Office of Sexual Assault Services provides individual and group counseling designed to alleviate the trauma associated with sexual assault and sexual harassment. University of Pittsburgh students who have been sexually assaulted or who have experienced some form of sex discrimination are eligible for services. Emergency, medical, legal, and police support are provided. Students are assisted in negotiating course schedule or room changes and in obtaining medical, legal, and counseling resources available to them within the University and local communities.

The peer education program is an integral component of Sexual Assault Services. P.E.E.R.S. (Peer Educators for an Environment Free of Rape and Sexual Exploitation) is a volunteer student outreach program whose mission is to create an awareness of the dynamics of sexual assault on the Pitt campus, promote healthy relationships and effective communication, and reduce the occurrence of sexual victimization.

For more information, call (412) 648-7856, visit 926 William Pitt Union or see <http://www.pitt.edu/~saserv>, or call (412) 648-7844.

STUDENT GOVERNMENT

The Graduate and Professional Student Association (GPSA) is the official umbrella graduate and professional student organization at the University of Pittsburgh. GPSA is made up of graduate student organizations (GSOs) from each of the schools at the University. The purpose of GPSA is to represent both the academic and non-academic interests of all graduate and professional students and to provide student-initiated and student-controlled services. GPSA coordinates efforts with graduate student organizations from the different University graduate and professional schools and provides graduate student representation on key University-wide committees. The GPSA also has a limited amount of funding to support student scholarship, including funding for student travel to academic conferences, for

interlibrary loans, and for academic programs sponsored by individual schools within the University. For more information, see the GPSA Web site at <http://www.pitt.edu/~gpsa2>.

STUDENT ORGANIZATIONS

Over 250 certified student organizations provide a myriad of opportunities for extracurricular activity. In addition to student government, media, publications, and programming organizations, there are clubs for sports, recreation, performing arts, politics, religion, service, professional and academic pursuits, ethnic and cultural enrichment, and many other specialized interests. A complete list of certified student organizations is available from the Office of Student Activities (140 William Pitt Union, 412-648-7830, or see <http://www.pitt.edu/~studact/>).

SURVIVAL SKILLS AND ETHICS PROGRAM

The Survival Skills and Ethics Program sponsors a series of monthly workshops and activities designed to help train graduate and professional students in the skills necessary for success during and after their time at the University. These skills include the ability to communicate both orally and in writing, to learn and teach, to obtain and keep a job, to manage stress and time, and to behave responsibly. Graduate and professional programs often do not provide comprehensive training in all of these areas; the Survival Skills & Ethics Program encourages the development of mechanisms for assisting graduate and professional students in developing these skills.

For more information on workshops and other services provided by the program, call (412) 624-7098, visit 4K57 Posvar Hall, or see <http://www.pitt.edu/~survival/>.

VETERANS SERVICES

The staff of the Office of Veterans Services assists veterans, war orphans, and veterans' dependents in obtaining and using their VA educational benefits. In addition to these services, the office implements the VA work-study program. The staff serves as the veterans' representative with the University, the Veterans Administration, and other related agencies. The office is located in room G-3 of Thackeray Hall. Call (412) 648-7885 or see <http://www.pitt.edu/~srfswweb/vetPgVetServ.htm> for more information.

WILLIAM PITT UNION

The William Pitt Union, built just over 100 years ago as the Schenley Hotel, has been extensively remodeled and renovated. The union is located across Bigelow Boulevard from the Cathedral of Learning and serves as the focal point for campus activities, student organizations, and the Division of Student Affairs. The union features a recreation center, arcade, food service, information service, art gallery, TV room, dance studio, lounges, meeting rooms, student organization offices, ticket office, dining rooms, and several multi-use spaces for programs. To reach the union's information desk, call (412) 648-7815.

GENERAL ACADEMIC REGULATIONS

ADVISING

The quality of education that graduate students receive is greatly enhanced with good academic advising at all stages of their program. Given the diversity of these needs, each school and program must determine the best way to provide these services. Each program should have a document describing its view of good graduate advising practices and a clear policy on how good graduate advising is assessed and rewarded. For more information on academic advising at the graduate level, see Elements of Good Academic Advising at <http://www.pitt.edu/~provost/advising.html>.

Students are encouraged to consult with the individual school for school-specific advising services. In addition, the online *Schedule of Classes* can be a useful advising tool (see <http://www.pitt.edu/~srfsweb/crseinPgCrInfo.htm>) in planning a course of study.

ALLOWABLE CREDITS

There are certain limitations on the credits that can be earned towards a graduate degree at the University of Pittsburgh. Those limitations are detailed below.

ACCEPTANCE OF TRANSFER CREDITS

Students who have completed graduate courses in degree-granting graduate programs at other accredited institutions prior to admission to the University of Pittsburgh should submit official transcripts from those institutions at the time they apply so that the courses can be evaluated for transfer credit. In no case may the total number of credits transferred exceed the maximum number stated in the sections of this bulletin pertaining to advanced degree requirements. *For more detail, see credit requirement information in the sections on Regulations Pertaining to Master of Arts and Master of Science Degrees, Professional Master's Degrees, or Doctoral Degrees as well as the relevant program information in Schools, Departments, and Programs.* Grades (and quality points) are not recorded for credits accepted by transfer.

Transfer credits will not be accepted for courses in which a grade lower than B (QPA=3.00) or its equivalent has been received. No credit will be granted toward an advanced degree for work completed in extension courses, correspondence courses, courses delivered electronically, or those offered in the off-campus center of another institution unless those courses are approved for equivalent graduate degrees at that institution and the institution has an accredited program.

The completion of requirements for advanced degrees must be satisfied through registration at the Pittsburgh campus of the University of Pittsburgh. Graduate students already enrolled may, when approved in advance by their department and the dean, spend a term or more at another graduate institution to obtain training or experience not available at the University of Pittsburgh and transfer those credits toward the requirements for an advanced degree at the University of Pittsburgh. In such instances, neither the University nor any of its

components is responsible for providing any financial assistance to the graduate student.

COURSE WORK ACCEPTABLE AS GRADUATE CREDIT

A substantial proportion of courses acceptable toward a graduate degree should be designed explicitly for graduate students. Introductory graduate-level (master's-level) courses are numbered 2000-2999, and those at an advanced graduate-level (doctoral-level) are numbered 3000-3999. To be eligible for a master's degree, a student must have completed at least four courses (12 credits) or one-half the total number of credits submitted for the degree, whichever is greater, at the graduate-level (2000 or 3000 series). Doctoral students must complete additional graduate-level courses as determined by his or her department or school. No lower-level undergraduate courses numbered 0001-0999 may be applied toward a graduate degree.

CREDIT BY COURSE EXAMINATION

Some schools at the University offer credit by course examination. Each school authorized to offer graduate courses clearly specifies in its section of this bulletin whether or not students may obtain credit toward a degree in this fashion and, if so, for which courses. A school granting graduate credit for life or work experience will do so only through the option of credit by examination.

CROSS REGISTRATION CREDITS

Students may register for graduate courses at Carnegie Mellon University, Duquesne University, the Pittsburgh Theological Seminary, and Robert Morris College under the Pittsburgh Council on Higher Education (PCHE) cross registration agreement. Such work, if approved in advance by the student's advisor, will not be considered as transfer credit and may be counted for credit toward a graduate degree; the grade earned will be used in computing the student's quality point average. *See also Cross Registration in Registration section of this bulletin.*

ENROLLMENT IN GRADUATE COURSES AS AN UNDERGRADUATE

University of Pittsburgh undergraduate students with sufficient preparation are permitted to enroll in certain graduate courses at the University following procedures determined by each school. The graduate credits earned may be counted toward the undergraduate degree if approved by the student's school. These may not be counted as credits toward a graduate degree except as noted below.

Undergraduate students who need fewer than 15 credits to complete requirements for the baccalaureate degree and who intend to continue study toward an advanced degree may be permitted during their final term to register for graduate courses that will later apply toward a graduate degree. The student must obtain written permission from the school of proposed graduate study that the courses may count when and if the student is admitted into the graduate degree program. This privilege should not be granted if the proposed total program exceeds a normal full-time load. Although these credits will appear

on the undergraduate transcript, they will not count toward fulfilling undergraduate degree requirements. They will be posted as advanced standing credits on the graduate transcript.

REGISTRATION

REGISTERING FOR CLASSES

After being admitted to a graduate program, students may register for classes with their academic advisor. The registration period for a term or session is published in the University's *Schedule of Classes* (see <http://www.pitt.edu/~srfsweb/crseinPgCrInfo.htm>), in course descriptions, on calendars (including the University's Academic Calendar at <http://www.pitt.edu/~provost/calendar.html>), and in numerous other publications.

Students registering for the first time are advised to complete registration well before the beginning of the term. Typically, the first day of classes is the last day for students to register. After the start of classes, registration for new and continuing students is permitted only in unusual circumstances and only with the written approval of the dean and the payment of a late registration fee.

Many students have the convenience of processing their registration form online in their school or advisor's office. Students may also process their registration form in the Registration Office, G-1 Thackeray Hall.

Students are required to have the signature of their academic advisor on the registration form. The student's signature on the registration form creates a financial obligation to the University of Pittsburgh. Once students have registered, they may view their class schedules online at <http://student-info.pitt.edu>.

FULL-TIME AND PART-TIME STUDY

Students must be officially admitted to the University to be eligible to register for classes. Graduate students who register for nine to 15 credits in the Fall or Spring Term are full-time students and are assessed the tuition rate for their school (for detail, see <http://www.ba.pitt.edu/irweb/tuition/tuithmpg.htm>). A school may require students enrolled in a degree program to register for more than nine credits. Students who register for fewer than nine credits are part-time students and are billed on a per-credit basis. During the Summer Term and Summer Sessions, most students are billed on a per credit basis regardless of the number of credits taken. At the **Katz Graduate School of Business**, full-time MBA students are billed a flat rate in the Summer Term (since this is a one-year program, tuition is spread over three terms).

Doctoral students who have completed all credit requirements for the degree, including any minimum dissertation credit requirements, and are working full-time on their dissertations may register for full-time dissertation study, which carries no credits or letter grade but provides students full-time status. Students so enrolled are assessed a special tuition fee but are still responsible for paying the full-time computer and network, security/transportation, student health service, and activity fees. Students must consult with the dean's office of their school for permission to register for full-time dissertation study.

MAXIMUM CREDITS PER TERM

No student is permitted to register for more than 15 graduate credits without written permission from the dean of the academic center in which the student is pursuing a degree. Graduate students who register for more than 15 credits will be billed for each additional credit that exceeds their full-time tuition rate. Exceptions include the following:

- The **Katz Graduate School of Business** allows its full-time MBA students to register for up to 18 credits in the Fall and Spring Terms before additional per credit tuition charges apply.
- The **School of Law** has no maximum number of credits in its first-professional programs for billing purposes, but permission of the associate dean is required to register for more than 15 credits per term.
- The **Graduate School of Public Health** allows students pursuing the Master of Health Administration or the Master of Public Health in Environmental and Occupational Health to take up to 16 credits during their first year of study.
- The **School of Social Work** allows its students to register for 16 credits in the Fall Term before additional per credit tuition charges apply.

Individual schools and departments may restrict the maximum program of any or all of their graduate students.

REGISTRATION STATUS AT GRADUATION

All graduate students must register for at least one credit or full-time dissertation study during the 12-month period preceding graduation (that is, must be on active status) and must be registered for the term in which they plan to graduate. Waivers may be obtained by submitting a written request to the registrar from the dean of the school. The request should be based on extenuating circumstances, e.g. inability of the student's dissertation committee to meet during the final term when a student has given reasonable notice or the student has completed all degree requirements in a previous term.

INACTIVE STATUS

Students who have not registered for at least one credit or full-time dissertation study (eligible doctoral students) during a 12-month period are transferred to inactive status and must file an application for readmission to graduate study (application fee required) before being permitted to register again. Students on inactive status cannot apply to graduate or take preliminary or comprehensive examinations. Also, students on inactive status are not eligible to use University facilities and should not expect to receive counseling from the faculty or active supervision by their advisor and committee.

ADDING AND DROPPING COURSES

Students may add and drop course(s) only during the add/drop period. The dates for the add/drop period are listed in the University's *Schedule of Classes*, in course descriptions, on calendars (including the University's Academic Calendar at <http://www.pitt.edu/~provost/calendar.html>), and in numerous other publications. Students who no longer wish to remain enrolled in a course after the add/drop period has ended may withdraw from the course or resign from the University. See *Monitored Withdrawal from a Course or Resigning from the University*.

AUDITING COURSES

With the consent of the school and instructor, students may choose to audit a course. To audit a course, a student must register and pay tuition for the course. The N grade is not counted toward graduation or the QPA.

CROSS REGISTRATION

Carnegie Mellon University, Duquesne University, the Pittsburgh Theological Seminary, Robert Morris College, and the University of Pittsburgh offer graduate students the opportunity for cross registration in graduate programs in the five institutions in the Fall and Spring Terms. Credits earned by cross registration in graduate courses at Carnegie Mellon, Duquesne University, the Pittsburgh Theological Seminary, and Robert Morris College, when approved in advance by the student's graduate advisor, are accepted as University of Pittsburgh credits for the purpose of the calculation of the quality point average and the completion of degree requirements. Each department at each institution retains the authority to establish the prerequisites for admission and the maximum enrollment in its own courses and to grant priority in registration to its own graduate students.

Cross registration is only available in the Fall and Spring Terms. Only full-time students may cross register. Students who cross register do not pay tuition to the host institution; however, they are responsible for any additional fees associated with the course such as laboratory fees, books, and the like. During the summer, students may attend one of the above colleges as guest students, but they must pay that institution's tuition and fees. Students are discouraged from cross registering during their term of graduation to avoid any delays in the receipt of course credit needed to graduate. Students should meet with their advisor before they cross register. *See also Cross Registration Credit.*

REGISTERING FOR TWO INDEPENDENT DEGREE PROGRAMS SIMULTANEOUSLY

Students may pursue two independent graduate degrees simultaneously in two different schools within the University or two different departments within the same school. Normally, such students should be enrolled for no more than a total of 15 credits per term. Special approvals and regulations apply before a student is allowed to register for courses in pursuit of two independent graduate degrees. *See Special Academic Opportunities, page 30, for further detail.*

REGISTERING FOR COOPERATIVE-, DUAL-, AND JOINT-DEGREE PROGRAMS

Dual- and joint-degree programs result in two degrees being awarded. Requirements for these programs include all or most of the requirements of two distinct academic degree programs. Dual programs exist within a single school; joint programs exist between two or more schools; cooperative programs are administered by two or more institutions. Before registering for courses in pursuit of a cooperative-, dual-, or joint-degree program, a student must be admitted to both programs. *See Special Academic Opportunities, page 30, for further detail.*

MONITORED WITHDRAWAL FROM A COURSE

After the add/drop period has ended, students may withdraw from a course that they no longer wish to attend by completing a Monitored Withdrawal Request form in the office of the school offering the course.

Students must process the Monitored Withdrawal Request form within the first nine weeks of the term in the fall and spring. Because summer sessions vary in length, students should check the summer *Schedule of Classes* for those deadlines. Students should check with the school offering the course for the last day to submit a Monitored Withdrawal Request form. The grade "W" will appear on the student's grade report and transcript. There is no financial adjustment to students' tuition or fee obligations involved in withdrawing from courses, but withdrawing may jeopardize satisfactory academic progress, financial aid, and assistantships or fellowships.

RESIGNING FROM THE UNIVERSITY FOR A SPECIFIC TERM

If students decide to drop all of their courses after the add/drop period has ended and before 60% of the term or session has been completed, they must resign from the University for that term. Official resignation from the University requires students to contact the Student Appeals Office. Students have several options. They may resign in person, by mail, or by calling (412) 624-7585 where students may leave a message 24 hours a day, including weekends and holidays. An R grade will appear on the student's academic transcript. Tuition is prorated from the date of the student's notification to the Student Appeals Office of the student's desire to resign, unless 60% of the term has been completed, in which case there is no refund.

After the 60% point in time of the term or session has passed, students who wish to terminate their registration may process withdrawal from all classes only with the permission of their academic dean. If the reason for withdrawal is medical or psychological in nature, the academic dean may consult with the director of Student Health Service prior to making a determination. There is no financial adjustment associated with this procedure, which results in the assignment of W grades for the courses.

GRADING & RECORDS

QPA AND GPA

Quality Point Average (QPA) and Grade Point Average (GPA) are numerical indications of a student's academic achievement. QPA is the average of letter grades earned toward a degree. GPA is the average of total letter grades earned.

ACADEMIC STANDARDS

An average of at least B (QPA=3.00) is required in the courses that make up the program for any graduate degree. A student with full graduate status is automatically placed on probation whenever his or her cumulative QPA falls below 3.00. Each school determines the restrictions placed on a student on probation. *See Probation, Suspension, and Dismissal for further detail.*

GRADING SYSTEM

The University of Pittsburgh has a standard letter grade system (*see Letter Grades below*). Some additional grading options are available in some courses as determined by the school and the instructor (*see sections below on University Grading Options and Other Grades*). Students are subject to the grading system of the school in which they are taking the course.

UNIVERSITY GRADING OPTIONS

Individual schools may elect to offer one of the following grade options for its courses:

LG	Letter Grade
H/S/U	Honors/Satisfactory/Unsatisfactory
S/N	Satisfactory/Audit
LG and H/S/U	Letter Grade & Honors/Satisfactory/Unsatisfactory
LG and S/N	Letter Grade & Satisfactory/Audit

From among the grading options approved by the school, each department identifies those it deems acceptable for its courses. Furthermore, each course instructor may specify, within the grading options approved by the school and department, which grading options may be selected by students taking his or her course.

Students should choose a grading option from those listed with the course in the *Schedule of Classes*. Grade Option/Audit Request forms for graduate courses are not required and will not be accepted by the Office of the Registrar. Schools establish their own deadlines and procedures for processing grade option and audit requests.

Students receive the grade H or S for satisfactory work and U for unsatisfactory work. The grades H and S are counted toward graduation but not the student's QPA. The grades N and U are not counted toward graduation or the QPA. The S grade indicates adequate graduate attainment; in evaluating thesis or dissertation research, an instructor may only use the S/N grading option.

Students may audit a course and receive an N grade with the consent of the instructor and school offering the course. However, to audit a course, a student must register and pay tuition for the course. The N grade is not counted toward graduation or the QPA.

LETTER GRADES

The University's letter grade system for graduate courses (not first-professional) is as follows:

Grade		Quality Points
A+	=	4.00
A	=	4.00 Superior Attainment
A-	=	3.75
B+	=	3.25
B	=	3.00 Adequate graduate-level attainment
B-	=	2.75
C+	=	2.25
C	=	2.00 Minimal graduate-level attainment
C-	=	1.75
D+	=	1.25
D	=	1.00
D-	=	0.75
F	=	0.00 Failure

Courses in the first-professional programs (DDM, JD, LLM, MD, PharmD) use a different letter grade system; students should refer to

the relevant school's text in the First-Professional Programs section of this bulletin.

OTHER GRADES: INCOMPLETE, WITHDRAW, RESIGN

Upon a student's completion of a course, one of the grades listed below may appear on the student's transcript in lieu of one of the options selected by the student and/or instructor under University Grading Options. None of these grades carries quality points. Students should consult with their individual school for information on any school-specific regulations regarding these grades.

G GRADE

The G grade signifies unfinished course work due to extenuating personal circumstances. Students assigned G grades are required to complete course requirements no later than one year after the term in which the course was taken. After the deadline has passed, the G grade will remain on the record, and the student will be required to re-register for the course if it is needed to fulfill requirements for graduation.

I GRADE

The I grade signifies incomplete course work due to nature of the course, clinical work, or incomplete research work in individual guidance courses or seminars.

W GRADE

The W grade signifies that a student withdrew from course. *See Withdrawing from Courses for more information.*

R GRADE

The R grade indicates that a student has resigned from the University. *See Resigning from the University for more information.*

Z GRADE

The Z grade indicates that an instructor has issued an invalid grade.

REPEATING COURSES

A student may repeat any course in which a grade of B- or lower is received if an authorization to repeat the course is given by the student's advisor and/or department. A school may restrict the type and/or number of different courses that may be repeated during one degree program. The grade earned by repeating a course is used in lieu of the grade originally earned, although the original grade is not erased from the transcript. No course may be repeated more than twice. No sequence course may be repeated for credit after a more advanced course in that sequence has been passed with a B or higher grade. The repeated course must be the same as that in which the original grade was earned. In extenuating circumstances, a department chair, with the dean's approval, may substitute another course of similar content. Grades of W, R, or N reported for the repeated course will not be counted as a course repeat. To initiate only the last course grade being computed in the QPA, a Course Repeat Form must be filed with the dean's office.

CHANGING GRADES

Only the instructor of a course may change a student's grade by submitting a Change of Grade Card. All grade changes require the authorization of the dean of the school from which the original grade was issued. While each school may determine a time limit for grade changes, they should be processed no later than one year after the initial grade was assessed. Changes in I grades are exempt from this one-year policy.

ACADEMIC RECORD

The academic record is not an official University transcript, but a document containing a student's complete University of Pittsburgh academic history. In addition to the information provided on the transcript (as listed below), the academic record provides students and advisors with admission data, academic events, and advanced standing/placement/transfer credit information. Students with no outstanding financial obligations to the University can receive one free copy of their academic records each term in G-3 Thackeray Hall. For more information, send E-mail to transcert@pdc.srfs.pitt.edu.

GRADE REPORT

At the end of each term, a grade report is prepared by the Office of the University Registrar and mailed to the student, provided that all charges have been paid. This report shows the total credits carried, the grade received in each course, and total quality points earned. Shortly after the term ends, students can also access their grades online via the secure server at <http://student-info.pitt.edu/>.

TRANSCRIPTS

An academic transcript serves as a permanent record of a student's academic progress. The transcript is a cumulative record of the student's QPA, as well as a record of the department, title, and grade for each course in which the student has enrolled. Students may request an official transcript that bears the seal of the University of Pittsburgh and the signature of the University Registrar at a cost of \$3.00 per copy. Currently enrolled students may also receive one free unofficial copy of their transcript per term for personal use. Upon graduation, the transcript reflects a student's degree and date; major; and, if applicable, honors, area of concentration, and minor.

ACADEMIC HONORS

Schools and programs may recognize academic achievement by students through fellowships, scholarships, and other awards. Students should consult with their individual school and/or program for more information.

PROBATION, SUSPENSION, AND DISMISSAL

Students who fail to make satisfactory progress may be subject to academic probation and/or suspension and dismissal. Students who have completed at least nine quality point credits and whose QPA falls below 3.00 will be placed on academic probation by the dean of their school. After a certain period of time on academic probation (the period is determined by the student's school), a student is subject to academic suspension and restricted from registering for classes in that school. Details of the school's probation system are available through that school.

EFFECT ON FINANCIAL AID AND SCHOLARSHIPS

Conditions for loan eligibility and many scholarships (including those for teaching assistants, teaching fellows, graduate student assistants, and graduate student researchers) usually require students to complete a specified number of credits each year and maintain a specified quality point average (QPA: credits counting toward the degree). Questions about the effect of unsatisfactory academic standing on loans should be directed to the Office of Admissions and Financial Aid in the Masonic Temple (4227 Fifth Avenue) at (412) 624-7488. Questions

about the effect of unsatisfactory academic standing on scholarships, including teaching and research assistantships, should be directed to the particular graduate school.

EDITORIAL ASSISTANCE AND PUBLICATION OF THESES/DISSERTATIONS

All graduate students must follow University regulations regarding editorial assistance and publishing of theses and dissertations as detailed below.

EDITORIAL ASSISTANCE

A student preparing a dissertation or other written work as part of academic requirements may, when appropriate, use the assistance of professional editors, provided that the following rules are observed:

- (1) The student receives the approval of the research advisor or professor of the course in which written work is being submitted.
- (2) The student receives assistance only in use of language and not in the subject matter of the written work.
- (3) The student acknowledges and describes all editorial assistance in the report.

PUBLICATION OF THESES AND DISSERTATIONS

Any thesis or dissertation may be published, either by the University or through an outside agency, provided due credit is given the University. No form of publication, however, will relieve the student of his or her responsibility to supply the proper abstract and the specified number of complete copies of the thesis or dissertation for binding and deposit in the University Library System.

The doctoral candidate is required to execute an agreement with University Microfilms, Inc. for the publication of the dissertation on microfilm (*see Regulations Pertaining to Doctoral Degrees, page 23*).

Advisors should exercise responsibility in approving research topics that will not endanger long-term research projects or the safety or welfare of informants. Dependent upon the circumstances and the research point at which the danger is recognized, the provost's office may authorize a delay in publication of a dissertation for up to a maximum of one calendar year. Similarly, a publication may be withheld for a maximum of six months, if required, for filing a patent application.

REGULATIONS PERTAINING TO MASTER OF ARTS AND MASTER OF SCIENCE DEGREES

The Master of Arts (MA) and Master of Science (MS) degree programs provide an introduction to scholarly activities and research and often serve as preparation for teaching careers. These degrees are awarded for the completion of a coherent program designed to assure the mastery of specified knowledge and skills, rather than a random accumulation of a certain number of courses. The overall form and content of the student's program of study is the responsibility of the faculty of the department. To carry out this responsibility, each student must be assigned a major advisor, who, in consultation with the student, plans a program of study and research in accord with school and departmental guidelines.

MA AND MS REQUIREMENTS

The Master of Arts and Master of Science degrees normally require the satisfactory completion of approximately 30 credits of graduate study approved by the department or school. No Master of Arts or Master of Science degree program may require fewer than 24 course credits. Not more than six credits may be granted toward the completion of the requirements for a master's degree for work completed at another accredited graduate institution or for work previously completed at the University of Pittsburgh. *See Acceptance of Transfer Credits on page 17 for further information.*

At least four courses (12 credits) or one-half the master's degree program, whichever is greater, must be at the graduate-level (the 2000 or 3000 series) and must be completed with an average grade of B (3.00). No course numbered below 1000 may be applied toward graduate degree requirements.

Some master's programs may include approved areas of concentration or minors. Areas of concentration define and describe the student's training and expertise within the broader discipline. Minors represent significant coursework completed in an area related to the student's specialty. Such areas of concentration or minors are added to the transcript upon the granting of the degree.

Master's degrees are conferred only on those students who have completed all courses required for the degree with an average grade of B (i.e., a 3.00 QPA).

The requirement of proficiency in foreign languages is at the discretion of individual departments or schools.

Departments provide students with a copy of school and departmental regulations appropriate for their program. Students are expected to become familiar with these and to satisfy all prescribed degree requirements.

COMPREHENSIVE EXAMINATION

MA or MS degrees are conferred only upon those students who, in one or more comprehensive examinations or the equivalent, show that they have mastered the general field of their graduate study. Each department or similar unit is responsible for specifying the content and procedure for administration of the comprehensive examination and will specify for each candidate the field of his or her examination, which may vary from student to student. When a program substitutes an equivalent requirement for the comprehensive examination, the department should notify the University Council on Graduate Study and describe the substitution.

Students on inactive, special, or provisional status or on probation are not eligible to take a comprehensive examination. These examinations must be taken at least one month prior to the last day of the term in which the degree is to be granted. The results must be reported promptly to the office of the dean but no later than the last day of the term in which the examination is administered. A student who is unable to complete all degree requirements within a two-year period after passing the comprehensive examination may be re-examined at the discretion of the department or school.

THESIS OPTION

The requirement of a thesis or its equivalent is at the discretion of individual departments or schools. If a thesis is submitted, its form must be in accord with specifications stipulated in the *University Style and Form Manual*. Each candidate must provide a suitable number of copies of the thesis for review and use as designated by the thesis examining committee, consisting of at least three members of the faculty recommended by the major advisor and approved by the department chair. The final oral examination in defense of the master's thesis is conducted by the thesis committee, and a report of this examination signed by all members of the committee must be filed in the office of the dean. After the examination, at least one copy of the approved thesis must be deposited with the dean, who forwards it to the appropriate offices for microfilming and deposit in the University Library System. A receipt for the thesis binding/microfilming fees must be submitted with the thesis.

NON-THESIS OPTION

It is usual for a program to require additional course work if a thesis is not required.

For the Master of Arts degree, students must acceptably describe, in writing, one or more substantial intellectual experiences or accomplishments. In programs in which a master's thesis is optional, the student must satisfy this requirement by submitting a paper (or papers), as designated by the major department, and must demonstrate competence in using methods of scholarship.

For the Master of Science degree, a paper or research project is usually required.

REGULATIONS PERTAINING TO PROFESSIONAL MASTER'S DEGREES

The professional master's degree programs are generally similar to those for the MA and MS except that they emphasize instruction in professional affairs and practice and serve as preparation for careers in the professions. The program of study is a coherent program designed to assure the mastery of specified knowledge and skills, rather than a random accumulation of a certain number of courses. The overall form and content of the student's program of study is the responsibility of the student's department or school. To carry out this responsibility, each student must be assigned a major advisor, who, in consultation with the student, plans a program of study and research in accord with school and departmental guidelines.

PROFESSIONAL MASTER'S DEGREE REQUIREMENTS

Professional master's degrees are conferred upon those students who demonstrate comprehensive mastery of their general field of study. The professional master's degrees normally require the satisfactory completion of more than 30 credits of graduate study approved by the department. No professional master's degree program may require fewer than 30 credits. No more than one-third of the total number of required credits may be granted to a student as transfer credit for work done at another accredited graduate institution. (*See Acceptance of Transfer Credits, page 17, for further detail.*) At least one-half of the credits earned in a master's degree program must be at the graduate

level (the 2000 or 3000 series). No courses numbered below 1000 may be applied toward graduate degree requirements. Master's degrees are conferred only on those students who have completed all course requirements with at least a 3.00 QPA.

Most professional master's degree programs provide opportunities for theoretical studies and practical applications. Students are expected to acquire professional skills through course work, projects, internships, practica, and/or research papers as part of demonstrating their comprehensive mastery of their field of study.

Requirements vary from school to school. Departments provide students with a copy of school and departmental regulations appropriate for their programs. Students are expected to become familiar with these and to satisfy all prescribed degree requirements.

Professional master's degrees are conferred upon those students who demonstrate comprehensive mastery of the general field of study. This includes: (a) satisfactory completion of all course requirements and (b) other performances that indicate comprehensive mastery such as examinations, internships, research projects, theses, and practica. These requirements vary from school to school; students should refer to the specific requirements of their program in the Schools, Departments, and Programs section of this bulletin.

REGULATIONS PERTAINING TO DOCTORAL DEGREES

While the regulations governing doctoral study in this section represent university-wide policy, *students should check the Schools, Departments, and Programs section of this bulletin* and with their advisor for any expansions of or exceptions to these rules.

ADMISSION TO DOCTORAL STUDY

In some departments, the requirements for admission to graduate study and for admission to doctoral study are identical, while other departments require the completion of a master's degree or its equivalent as a prerequisite for admission to doctoral study. Admission to doctoral study does not include any implication concerning admission to candidacy for the Doctor of Philosophy degree.

Normally, only one major department of graduate study is permitted for the PhD degree. However, a few formal interdisciplinary programs and, under some circumstances, some independently designed interdisciplinary doctoral programs are available (*see Interdisciplinary Doctoral Programs, page 26*).

PROGRAMS OF STUDY

PhD programs offered at the University of Pittsburgh provide a coherent series of courses, seminars, and discussions designed to develop in the student a mature understanding of the content, methods, theories, and values of a field of knowledge and its relation to other fields. Each program trains the student in the methods of independent research appropriate to the discipline and provides an advisor and a committee to guide the student in an extended investigation of an original and independent research project of significance in the field.

The overall form and content of each student's program is the responsibility of the Graduate Faculty of the department. To carry out this responsibility, the departments must ensure that each student has

a major advisor who, in consultation with the student, plans a program of study and research in accord with school and departmental guidelines. The advisor may prescribe additional courses both within and outside the department that are essential and/or appropriate to the student's program.

Some doctoral programs may include approved areas of concentration used to define and describe the student's training and expertise within the broader discipline. Such an area of concentration is added to the transcript upon the granting of the degree.

Doctoral level courses are numbered in the 3000 series, but courses numbered in the 2000 series may also be appropriate for doctoral study. Normally, courses numbered below 2000 do not meet the minimum requirements for doctoral study, although they may be taken to supplement a doctoral program.

Students must maintain a minimum cumulative QPA of 3.00 in courses to be eligible to take the preliminary and comprehensive examinations as well as to graduate.

The requirement of proficiency in the use of foreign languages or other tools of research is at the discretion of individual departments or schools.

Departments provide students with a copy of school and departmental regulations appropriate for their program and, in turn, students are expected to become familiar with these and to satisfy all prescribed degree requirements.

CREDIT REQUIREMENTS

The minimum credit requirement for the PhD degree is met by six terms of registration as a graduate student for 12 or more credits per term or the equivalent number of credits taken in a reduced load over a longer period of time. If the school requires completion of its master's degree program prior to admission into its doctoral program, at least four terms of registration for 12 or more credits per term or the equivalent number of credits in a reduced load are required as a minimum for the PhD degree. No more than 30 credits may be accepted for a master's degree awarded by another institution to meet the minimum credit requirement; some schools have more stringent requirements, including the **Faculty of Arts and Sciences** and the **Graduate School of Public Health**, both of which will accept only 24 credits for a master's degree awarded by another institution.

In recognition of graduate study beyond the master's degree successfully completed elsewhere, no more than 12 additional credits may be accepted at the time of admission to meet the minimum credit requirement. (*See also Acceptance of Transfer Credits, page 17.*) No more than 30 credits may be accepted for a previously earned PhD degree in recognition of master's degree work, though some schools have more stringent requirements, including the following:

- The **Faculty of Arts and Sciences** accepts only 24 credits from a previously earned PhD in recognition of master's degree work.
- The **Graduate School of Public Health** accepts only six credits from a previously earned PhD degree in recognition of its students' work towards its Master of Science programs. Also, its students working towards the Master of Public Health may use credits from a previously earned PhD to satisfy no more than one-third of the required credits for the MPH.

Graduate students already enrolled may, when approved in advance by their department and the dean, spend a term or more at another graduate institution to obtain training or experience not available at the University of Pittsburgh and transfer those credits toward the requirements for an advanced degree at the University of Pittsburgh. In all cases, at least three terms, or 36 credits, of full-time doctoral study or the equivalent in part-time study must be successfully completed at the University of Pittsburgh.

RESIDENCY REQUIREMENT

Students seeking the PhD degree are required to engage in a minimum of one term of full-time doctoral study, which excludes any other employment except as approved by their departments.

PRELIMINARY EVALUATION

The preliminary evaluation should be designed to assess the breadth of the student's knowledge of the discipline, the student's achievement during the first year of graduate study, and the potential to apply research methods independently. The form and nature of the evaluation should be approved at the school level. It should be conducted at approximately the end of the first year of full-time graduate study. The evaluation is used to identify those students who may be expected to complete a doctoral program successfully and also to reveal areas of weakness in the student's preparation. Evaluation results must be reported promptly to the dean's office, but no later than the last day of the term in which the evaluation occurs. A student on provisional, inactive, or special status or on probation is not eligible to take the preliminary evaluation.

COMPREHENSIVE EXAMINATION

The comprehensive examination should be designed to assess the student's mastery of the general field of doctoral study, the student's acquisition of both depth and breadth in the area of specialization within the general field, and the ability to use the research methods of the discipline. In some programs, the comprehensive examination is combined with the overview or prospectus meeting. It should be administered at approximately the time of the completion of the formal course requirements and should be passed at least eight months before the scheduling of the final oral examination and dissertation defense. In no case may the comprehensive examination be taken in the same term in which the student is to graduate. Examination results must be reported promptly to the dean's office but no later than the last day of the term in which the examination is administered. A student who is unable to complete all degree requirements within a five-year period after passing the comprehensive examination may be re-examined at the discretion of the department or school. A student on provisional, inactive, or special status or on probation is not eligible to take the comprehensive examination.

DOCTORAL COMMITTEE

Before the student is admitted to candidacy for the PhD degree, the student's major advisor proposes, for the approval of the department chair or director of the school's doctoral program and the dean, a committee of four or more persons, including at least one from another department in the University of Pittsburgh or from an appropriate graduate program at another academic institution, to serve as the doctoral committee. The majority of the committee, including the major advisor, must be full or adjunct members of the Graduate Faculty (see <http://www.pitt.edu/~graduate> for most recent Graduate Faculty

roster). This committee must review and approve the proposed research project before the student may be admitted to candidacy.

This doctoral committee has the responsibility to advise the student during the progress of the candidate's research and has the authority to require high quality research and/or the rewriting of any portion or all of the dissertation. It conducts the final oral examination and determines whether the dissertation meets accepted standards.

Meetings of the doctoral candidate and his/her dissertation committee must occur at least annually from the time the student gains admission to doctoral candidacy. During these meetings, the committee should assess the student's progress toward the degree and discuss objectives for the following year and a timetable for completing degree requirements. It is the responsibility of the dean of each school to determine a mechanism for monitoring the occurrence of these annual reviews.

The membership of the doctoral committee may be changed whenever it is appropriate or necessary, subject to the approval of the department chair and the dean.

When a doctoral committee member leaves the University, he or she must be replaced unless the dissertation is almost complete or the member has an essential role on the committee. In the latter case, the dean's approval should be obtained. When the chair of a committee leaves and cannot be conveniently replaced, a co-chair must be appointed from within the department, and the restructured committee requires the approval of the dean and either the department chair or the director of the school's doctoral program. If the defense takes place within a few months of the chair's departure, the requirement of the co-chair is usually waived.

A retired faculty member may remain as a member or chair of a committee if he or she is spending considerable time in Pittsburgh or the vicinity and is still professionally active. Retired faculty who meet these criteria may also be appointed as a member or as a co-chair (but not chair) of a newly formed committee. Retired faculty who leave the Pittsburgh area and/or do not remain professionally active should be replaced on committees and the revised committee approved by the dean and either the department chair or the school's director of doctoral programs.

OVERVIEW OR PROSPECTUS MEETING

Each student must prepare a dissertation proposal for presentation to the doctoral committee at a formal dissertation overview or prospectus meeting. The overview requires the student to carefully formulate a plan and permits the doctoral committee members to provide guidance in shaping the conceptualization and methodology of that plan. The doctoral committee must unanimously approve the dissertation topic and research plan before the student may be admitted to candidacy for the doctoral degree. Approval of the proposal does not imply either the acceptance of a dissertation prepared in accord with the proposal or the restriction of the dissertation to this original proposal. If the research proposed in the overview or prospectus involves human subjects, that proposed research must be approved by the University Institutional Review Board (IRB) before it may be carried out. *For details, see Human Research Subjects: Institutional Review Board under Rights and Responsibilities on page 28, and a description of the Institutional Review Board on page 28.*

ADMISSION TO CANDIDACY FOR THE DOCTOR OF PHILOSOPHY DEGREE

Admission to candidacy for the Doctor of Philosophy degree constitutes a promotion of the student to the most advanced stage of graduate study and provides formal approval to devote essentially exclusive attention to the research and the writing of the dissertation. To qualify for admission to candidacy, students must fulfill the following requirements:

- Be in full graduate status
- Have satisfied the requirement of the preliminary evaluation
- Have completed formal course work with a minimum quality point average of 3.00
- Have passed the comprehensive examination
- Have received approval of the proposed subject and plan of the dissertation from the doctoral committee following an overview or prospectus meeting of the committee

In some schools, admission to candidacy is a prerequisite to registration for dissertation credits. Students are informed of admission to candidacy by written notification from the dean, who also states the approved doctoral committee's composition.

REGISTERING FOR FULL-TIME DISSERTATION STUDY

Doctoral students who have completed all credit requirements for the degree, including any minimum dissertation credit requirements, and are working full-time on their dissertations may register for **Full-Time Dissertation Study**, which carries no credits or letter grade but provides students full-time status. Students so enrolled are assessed a special tuition fee but are still responsible for the full-time computer and network, security/transportation, student health, and activity fees. Students must consult with the dean's office of their school for permission to register for full-time dissertation study.

DISSERTATION AND ABSTRACT

Each student must write a dissertation that presents the results of his or her research project. An appropriate research project involves a substantive piece of original and independent research grounded in an appropriate body of literature. The dissertation must be relevant to an identifiable field as it is currently practiced, present a hypothesis tested by data and analysis, and provide a significant contribution or advancement in that field. It is the responsibility of the student's doctoral committee to evaluate the dissertation in these terms and to recommend the awarding of the doctoral degree only if the dissertation is judged to demonstrate these qualities.

A dissertation should demonstrate the following characteristics:

- The establishment of a historical context for the presentation of an innovative and creative approach to the problem analysis and solution
- A clear understanding of the problem area as revealed by analysis and synthesis of a broad literature base
- A well-defined research design

- Clarity in composition and careful documentation
- Results of sufficient merit to be published in refereed journals or to form the basis of a book or monograph
- Sufficient detail so that other scholars can build on it in subsequent work
- The preparation of the author to assume a position within the profession

If the dissertation is the result of a collaborative research effort, the project should be structured in such a way that the student's dissertation results from one clearly identified piece of work in which the student has unquestionably supplied the major effort. The contributions of the student and the other collaborators must be clearly identified.

Published articles authored by the student and based on research conducted for the dissertation study may be included in the dissertation if the student's department and school have a written policy that this is acceptable. In any case, the published work must be logically connected and integrated into the dissertation in a coherent manner, and sufficient detail must be presented to satisfy the characteristics of a dissertation. The student should be the sole or primary author of the published work. If the published articles were co-authored, the contribution of the student must be clearly delineated in the introduction so the committee can ascertain that the student's own work satisfies the requirements of a dissertation. The Style and Form Manual gives instructions on incorporating articles into the dissertation.

Candidates for the doctoral degree must provide a suitable number of copies of the dissertation, as determined by the doctoral committee and school policy, for review and use during the final oral examination. The general format of the dissertation and the abstract is determined by the Office of the Provost and is set forth in the University's Style and Form Manual. Specific instructions should be available in the office of the dean of the school. After the final oral examination is successfully completed, the candidate must deposit with the dean at least one copy of the approved, completed dissertation and abstract in final form, at least two additional copies of the dissertation abstract, and a receipt for payment of the dissertation binding/microfilm fees. The candidate is also required to execute an agreement with University Microfilms Inc. for the publication of the dissertation on microfilm and for the publication of the abstract of the dissertation in *Dissertation Abstracts*.

LANGUAGE OF THE DOCTORAL DISSERTATION

The language in which doctoral dissertations are written shall normally be English. Exceptions may be granted by the student's dean with the approval of the dissertation advisor and committee, but only for sound reasons of scholarship. Permission shall never be granted on the grounds of the student's inadequate command of English.

FINAL ORAL EXAMINATION

The final oral examination in defense of the doctoral dissertation is conducted by the doctoral committee and need not be confined to materials in and related to the dissertation. Any member of the Graduate Faculty of the University may attend and participate in the examination. The date, place, and time of the examination should be published well in advance in the University Times. Other qualified individuals may

be invited by the committee to participate in the examination. Only members of the doctoral committee may be present during the final deliberations and vote on the passing of the candidate. A report of this examination, signed by all the members of the doctoral committee, must be sent to the dean. If the decision of the committee is not unanimous, the case is referred to the dean for resolution. The chair of the doctoral committee should ensure that the dissertation is in final form before requesting signatures of the members of the committee.

INTERDISCIPLINARY DOCTORAL PROGRAMS

A student may be admitted into one of two types of interdisciplinary doctoral programs, generic and individualized.

GENERIC PROGRAMS

Generic programs are ongoing, formally structured, and approved doctoral programs. Admission to these programs follows the same procedures as those of departmental programs.

INDIVIDUALIZED PROGRAMS

Individualized programs are specially designed to permit an exceptionally able student who has earned a master's degree or the equivalent to pursue an interdisciplinary doctoral program structured to satisfy his or her unique goals. Such students should apply to the dean of the school if the departments involved in the proposed program are organized within one school or to the provost if the departments are organized within more than one school. The student must satisfy the admission requirements of each of the departments or schools involved in the proposed program.

If the request is approved, the dean or the provost, in consultation with the departments concerned, will designate five members from these departments to serve as an advisory committee. After these advisors meet with the student, a chief advisor is selected to assume responsibility for general guidance to the student. These advisors continue their responsibility until the student is admitted to candidacy for the PhD degree and may, if it is appropriate, continue as the doctoral committee for this student.

OTHER DOCTORAL DEGREES

The University of Pittsburgh, through its professional schools, offers the following doctoral degrees in professional fields of study: Doctor of Education and Doctor of Public Health.

These doctoral degree programs are similar to those for the PhD in the degree of rigor required; the minimum total credit requirements and permissible transfer credits; the requirements for the successful completion of a preliminary evaluation and a comprehensive examination; the admission to doctoral candidacy; the nomination of a doctoral committee; the preparation of the dissertation and abstract; the publication of the dissertation; and the successful completion of the final oral examination. Professional doctoral dissertations are usually based on an in-depth empirical research project by the student and are intended to permit the student to apply relevant theory and knowledge as well as to demonstrate skills in analysis of a major problem and to contribute to the improvement of practice in the student's area of specialization.

Such doctoral degree programs may differ from those for the PhD in several ways. They are generally more strongly focused on professional affairs and practice and often serve as preparation for or advancement of careers in the professions.

STATUTE OF LIMITATIONS/LEAVES OF ABSENCE

The purpose of the statute of limitations is to ensure that a graduate degree from the University of Pittsburgh represents mastery of current knowledge in the field of study. Individual schools within the University may adopt policies that are more stringent, but not less, than those stated here.

All requirements for MA and MS degrees must be completed within a period of four consecutive calendar years from the student's initial registration for graduate study; all professional master's degrees, within five years. Dual degrees and joint degrees that require course work in excess of 50 credit hours may be granted a longer statute of limitations by the University Council on Graduate Study.

From the student's initial registration for graduate study, all requirements for the PhD degree must be completed within a period of ten years, or within eight years if the student has received credit for a master's degree appropriate to the field of study. A student who is unable to complete all degree requirements within a five-year period after passing the comprehensive examination may be re-examined at the discretion of the department or school. Programs for professional doctoral degrees, for which the majority of candidates pursue part-time study while working full-time within their chosen disciplines, may be granted a longer statute of limitations by the schools offering the degrees.

Under exceptional circumstances, a candidate for an advanced degree may apply for an extension of the statute of limitations. The request must be approved by the department or departmental committee (master's or doctoral) and submitted to the dean for final action. Requests for an extension of the statute of limitations must be accompanied by a departmental assessment of the work required of the student to complete the degree as well as documented evidence of the extenuating circumstances leading to the requested extension. Students who request an extension of the statute of limitations must demonstrate proper preparation for the completion of all current degree requirements.

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of two years may be granted to doctoral students or one year to master's students. The length and rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

GRADUATION

REQUIREMENTS FOR GRADUATION

Graduation requirements for MA, MS, professional master's, and doctoral degrees are described earlier in this bulletin under the relevant sections detailing the regulations pertaining to each degree. In order to graduate from the University of Pittsburgh, a graduate student must be an active University of Pittsburgh student registered for at least one credit or full-time dissertation study in the term of graduation. *See specific schools and programs for detailed information on degree and graduation requirements.*

APPLICATION TO GRADUATE

Students must file an application for graduation in the dean's office of their school early in the term in which graduation is expected. Each school establishes its own deadline by which students must apply for graduation. Students should check with their dean's office for the deadline. As noted above, students must be active and registered in the term in which they are to graduate; in exceptional circumstances, students who complete all the degree requirements at the end of a term but graduate in the next term may petition the dean of the school for a waiver of this registration requirement. The requirement that a student be on active status cannot be waived.

Prior to the end of the term in which they graduate, all doctoral candidates must submit to the dean's office a completed Survey of Earned Doctorates.

CERTIFICATION FOR GRADUATION

The Graduate Faculty of the department or program evaluates the performance of the student. If that performance is satisfactory, a report should be submitted to the dean certifying that the candidate has satisfactorily completed all departmental requirements for a graduate degree. The dean, after confirming that the overall school and University requirements have been met, certifies the candidate for graduation.

COMMENCEMENT

Candidates for graduation are encouraged to appear in person at the Annual Commencement Convocation, usually held the Sunday after the Spring Term ends. Although the degree is officially conferred at commencement, diplomas are mailed to graduates several weeks later.

RIGHTS AND RESPONSIBILITIES

The University has a number of official policies affecting students. For complete and current text on all University policies, please see http://www.pitt.edu/HOME/PP/pp_handbooks.html.

The information below summarizes several key University-wide policies affecting graduate students, but students are also responsible for being cognizant of those University, school, and departmental regulations relevant to their programs of study.

ACADEMIC INTEGRITY POLICY

Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Should a student be accused of a breach of academic integrity or have questions regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These general procedures may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures at <http://www.pitt.edu/~graduate/ail.html>. Individual schools have their own academic integrity policies, and students are encouraged to review these school-specific guidelines, as well.

AFFIRMATIVE ACTION AND NON-DISCRIMINATION POLICY

The University of Pittsburgh, as an educational institution and as an employer, values equality of opportunity, human dignity, and racial/ethnic and cultural diversity. Accordingly, the University prohibits and will not engage in discrimination or harassment on the basis of race, color, religion, national origin, ancestry, sex, age, marital status, familial status, sexual orientation, disability, or status as a disabled veteran or a veteran of the Vietnam era. Further, the University will continue to take affirmative steps to support and advance these values consistent with the University's mission. This policy applies to admissions, employment, and access to and treatment in University programs and activities.

AIDS POLICY

The University of Pittsburgh does not discriminate against individuals who are diagnosed as HIV positive or as having AIDS. The University recognizes that the health condition of individuals is personal and confidential. Reasonable precautions will be taken to protect information regarding the health condition of all members of the University community. Based on medical evidence that indicates that there is no risk of transmitting HIV through casual contact in the classroom or circumstances involving only casual contact with others, the University will impose no undue restrictions on faculty, staff, or students who are infected with HIV.

For complete text on this policy, see <http://www.pitt.edu/HOME/PP/policies/06/06-01-01.html>.

COMPUTING USE POLICY

Every member of the University community has two basic rights regarding computing: privacy and a fair share of resources. It is unethical for another person to violate these rights. All users, in turn, are expected to exercise common sense and decency with regard to the campus computing resources. Please read Ethical Guidelines for Computing, available in campus computing labs or online at <http://www.pitt.edu/~document/ethics/ethics.html>, for details.

Students are subject to the rules and regulations as described in the University of Pittsburgh Student Code of Conduct (*see below*). Students should realize that any misuse of computing resources may result in the suspension of their computing privileges.

COPYRIGHT POLICY

The University of Pittsburgh affirms that, except as specifically exempted by this policy, faculty, staff, and students are entitled to claim copyright ownership, including world-wide rights, in the following works authored by them: books, articles, educational coursework, similar works that are intended to disseminate the results of academic research or scholarly study, popular fiction or nonfiction works, poems, musical compositions, and other works of artistic imagination.

The University has no proprietary interest in copyrightable materials produced by faculty, staff, or students under contract with entities external to the University (in which the faculty, staff, or students have no controlling or majority interest), except as specifically exempted by this policy. For complete text of the policies, including the aforementioned exemptions, see <http://www.pitt.edu/HOME/PP/policies/11/11-02-02.html>.

DRUG-FREE SCHOOL AND WORKPLACE POLICY

The University of Pittsburgh prohibits the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance on University property or as part of any University activity. Faculty, staff, and students of the University must also comply with the laws of the Commonwealth of Pennsylvania on the possession and consumption of alcohol.

Violation of this policy will result in disciplinary action within 30 days, including, but not limited to, a warning, written reprimand, suspension, dismissal, expulsion, and/or mandatory participation and successful completion of a drug abuse assistance or rehabilitation program approved by an appropriate health or law enforcement agency.

Any University employee paid from federally funded grants or contracts, or any students participating in any federally funded or Guaranteed Student Loan program, must notify the University of any criminal drug statute conviction for a violation occurring at the University or while engaged in University activities.

For complete text on this policy, see <http://www.pitt.edu/HOME/PP/policies/06/06-02-01.html>.

FACULTY-STUDENT RELATIONSHIPS

The University's educational mission is promoted by professional relationships between faculty members and students. Relationships of an intimate nature (that is, sexual and/or romantic) compromise the integrity of a faculty-student relationship whenever the faculty member has a professional responsibility for the student. The University prohibits relationships between a faculty member and a student whose academic work, teaching, or research is being supervised or evaluated by the faculty member.

If an intimate relationship should exist or develop between a faculty member and a student, the University requires the faculty member to remove himself/herself from all supervisory, evaluative, and/or formal advisory roles with respect to the student.

Definition Note: In this policy, the definition of "faculty member" refers to anyone appointed by the University as a teacher, researcher, or academic administrator, including graduate and undergraduate students so appointed. For complete text on this policy, see <http://www.pitt.edu/DOC/94/271/42590/policies/02/02-04-03.html>.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT

In compliance with the Family Educational Rights and Privacy Act of 1974, commonly referred to as the Buckley Amendment, the University guarantees that students have the right to inspect all personally identifiable records maintained by the institution and may challenge the content and accuracy of those records through appropriate institutional procedures. It is further guaranteed by the University that student records containing personally identifiable information will not be released except as permitted by the Family Educational Rights and Privacy Act. See <http://www.pitt.edu/~srfsweb/buckley.htm> for more information on FERPA.

GRADUATE STUDENT RESEARCHER POLICY STATEMENT

Graduate Student Researchers (GSRs) at the University of Pittsburgh are graduate students who are receiving financial support from research

funds in return for duties performed to meet the goals for which the funds were awarded. The research performed is also normally an integral part of the student's research practicum experience, thesis, or dissertation. A primary goal of the appointment, from the point of view of both the University and the student, is to provide financial support to the graduate student. For the complete text of the GSR Policy Statement, refer to <http://www.pitt.edu/~graduate/gsr.html>.

HARASSMENT POLICIES

HARASSMENT

No University employee, student, or individual on University property may intentionally harass or abuse a person (physically or verbally) with the purpose or effect of unreasonably interfering with such person's work or academic performance, or of creating an intimidating, hostile, or offensive work or academic environment.

SEXUAL HARASSMENT

The University of Pittsburgh is committed to the maintenance of a community free from all forms of sexual harassment. Sexual harassment violates University policy as well as state, federal, and local laws. It is neither permitted nor condoned.

It is also a violation of the University of Pittsburgh's policy against sexual harassment for any employee or student at the University of Pittsburgh to attempt in any way to retaliate against a person who makes a claim of sexual harassment.

Any individual who, after thorough investigation and an informal or formal hearing, is found to have violated the University's policy against sexual harassment, will be subject to disciplinary action, including, but not limited to, reprimand, suspension, termination, or expulsion. Any disciplinary action taken will depend upon the severity of the offense. For more information, see <http://www.pitt.edu/~provost/har.html>.

HUMAN RESEARCH SUBJECTS: INSTITUTIONAL REVIEW BOARD

The University of Pittsburgh is guided by the ethical principles regarding all research involving humans as subjects, as set forth in the report of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (entitled: *Ethical Principles and Guidelines for the Protection of Human Subjects for Research [the "Belmont Report"]*).

Most research at the University involving humans as subjects must be reviewed and approved by an Institutional Review Board (IRB) before the research will be allowed to proceed. For complete text of the IRB's policies and practices, see <http://www.irb.pitt.edu/> or contact the IRB at (412) 692-4370.

PATENT POLICY

A University student, during his/her period of enrollment, may be responsible for new discoveries and inventions that could have commercial value and contribute to scientific, technological, social, and cultural progress. Those accomplishments should be patented in the best interest of the student, the University, the public, and the government. The University's policy on patents determines the rights and obligations of the student and the University in any technology the student may invent while enrolled in the University. Details of this University policy are available from the Office of Technology Transfer and Intellectual Property at 200 Gardner Steel Conference Center and at <http://www.pitt.edu/HOME/PP/policies/11/11-02-01.html>.

RESEARCH INTEGRITY

The University of Pittsburgh seeks excellence in the discovery and dissemination of knowledge. Excellence in scholarship requires all members of the University community to adhere strictly to the highest standards of integrity with regard to research, instruction, and evaluation. Research misconduct carries potential for serious harm to the University community, to the integrity of science, and to society as a whole. The University's Research Integrity Policy is available online at <http://www.pitt.edu/DOC/94/271/42590/policies/11/11-01-01.html>.

SMOKING POLICY

Smoking is prohibited in all University-owned and leased facilities, including residence halls and off-campus housing facilities, and in all University vehicles, including motor pool vehicles, campus buses, and vans, with explicit limited exceptions described in University Policy 04-05-03.

STUDENT CODE OF CONDUCT

The Student Code of Conduct is an outline of the non-academic rights and responsibilities of University students. The code defines offenses against students. A student or University official may file a complaint of violation of the Student Code of Contact at the University Student Judicial System Office. For a copy of the code, please contact the

Judicial System Office in 738 William Pitt Union at (412) 648-7918 or see <http://www.pitt.edu/~osaweb/usjs/code.html>.

JUDICIAL SYSTEM

The Office of the University Student Judicial System coordinates the Campus Judicial Board. It also receives, previews, and acts upon complaints of violations of the Student Code of Conduct. Its purpose is to provide due process and fair treatment in disciplinary actions. All complaints should be filed here.

Judicial Affairs also conducts a Student Mediation Program, monitors FERPA (Family Educational Rights and Privacy Act) guidelines on student records, and screens requests for contact of students.

**TEACHING ASSISTANT/TEACHING FELLOW/
GRADUATE STUDENT ASSISTANT POLICY
STATEMENT**

Teaching Assistants (TAs), Teaching Fellows (TFs), and Graduate Student Assistants (GSAs) at the University are graduate students who are receiving support in return for specified duties while gaining teaching and teaching-related experience under the guidance of faculty mentors. Their primary objective, from the standpoint of the University and the individual, is to make steady progress toward an advanced degree. TA/TF/GSA appointment status is dependent upon graduate student status. The complete policy statement for TA/TF/GSAs is available at <http://www.pitt.edu/~graduate/tapolicy.html>.

SPECIAL ACADEMIC OPPORTUNITIES

Special academic opportunities such as certificate programs provide students with ways to augment their education and experience with expanded study programs both on and off campus, in both university and professional settings.

AREA OF CONCENTRATION AND MINORS

Some graduate programs may include approved areas of concentration or minors. Areas of concentration define and describe the student's training and expertise within the broader discipline. Minors represent significant course work completed in an area related to the student's specialty. An area of concentration that is specified for a particular degree program can only be posted to the academic record and the official transcript of those students completing the degree program. A graduate minor offered by the faculty at the Pittsburgh campus is available to any graduate student enrolled in an academic degree program on the campus provided that the school from which the student is graduating recognizes this minor. For each degree, only one minor and one area of concentration can be pursued. Areas of concentration or minors are added to the transcript upon the granting of the degree. *See the Schools, Departments, and Programs section of this bulletin for available areas of concentration and minors.*

CERTIFICATE PROGRAMS

Students may enrich their educational experience by electing to take an academic interdisciplinary certificate program in the areas listed at the start of the Schools, Departments, and Programs section of this bulletin (*see page 31*).

A certificate program at the graduate level is a coherent set of courses and related work in a particular area; the minimum credit requirement is 15 credits, of which 12 credits must be earned at the University of Pittsburgh. The certificate may appear on the transcript as a degree goal and will appear on the final transcript as an awarded certificate.

A student must be formally admitted into a certificate program. The requirements for each certificate vary and students should contact the certificate program director.

CROSS REGISTRATION

Carnegie Mellon University, Duquesne University, the Pittsburgh Theological Seminary, Robert Morris College, and the University of Pittsburgh offer graduate students the opportunity for cross registration

in graduate programs in the five institutions in the Fall and Spring Terms. *See Cross Registration in the Registration section of this bulletin for further details.*

TWO INDEPENDENT DEGREE PROGRAMS SIMULTANEOUSLY

Students may pursue two independent graduate degrees simultaneously in two different schools within the University or two different departments within the same school. Students desiring to enroll in two degree programs must have approval from both program faculties and their respective deans, must be admitted into both programs, and must satisfy the degree requirements of both programs. Students are billed at the tuition rate of the primary academic program. Normally, such students should be enrolled for no more than a total of 15 credits per term.

The same examination, thesis, or dissertation cannot be used to fulfill requirements for two independent degrees, although a maximum of six credits of course work may be used in partial fulfillment of the requirements of both degrees. It is the responsibility of the dean or deans, if two schools are involved, to ensure that this regulation is enforced.

COOPERATIVE-, DUAL-, AND JOINT-DEGREE PROGRAMS

Dual- and joint-degree programs result in two degrees being awarded. Requirements for these programs include all or most of the requirements of two distinct academic degree programs. These programs may result in a student earning two separate master's degrees, a master's and a first-professional degree, or a master's or first-professional degree and a doctoral degree, but never result in a student earning two separate doctoral degrees. Dual programs exist within a single school; joint programs exist between two or more schools; cooperative programs are administered by two or more institutions. The same course, examination, or thesis may be used to fulfill requirements only if so specified in the documents formally establishing the joint- or dual-degree program approved by the University.

Students must be admitted to both academic programs offering the dual or joint degrees being sought and must graduate from both degree programs at the same time. Students are advised to see the individual school for other specific requirements that apply.

SCHOOLS, DEPARTMENTS, AND PROGRAMS

Students who are interested in or accepted to any of the University of Pittsburgh's graduate or professional programs listed below other than those leading to the first-professional degrees offered by the University (MD, JD, LL.M., PharmD, or DMD) will find useful most of the sections of this bulletin. Descriptions of the University, its regulations, and its services are included in the sections prior to the program-specific information in the Schools, Departments, and Programs section of the bulletin, and should be read in conjunction with the specific program information detailed under the relevant school.

Students interested in first-professional programs (MD, JD, LL.M., PharmD, or DMD) can ignore much of the bulletin prior to the First-Professional Programs section, but should familiarize themselves with the general information on the University, as well as the section on Campus Facilities & Student Services, and the University-wide policies detailed in Rights and Responsibilities. The **Schools of Medicine, Law, Dental Medicine, and Pharmacy** appear in the Graduate Programs section for programs leading to the graduate and professional advanced degrees as well as in the First-Professional Programs section since these schools offer both types of programs. Faculty are listed by their department or program at the end of the school.

Students should note that the listings of requirements and procedures for admissions, registration, and other information listed in the sections prior to the more program-specific information provided in the Schools, Departments, and Programs section of this bulletin represent the minimum requirements and basic procedures. Students should consult the information on their specific school, program, and department for detail on additional, stricter, or more specific requirements and procedures.

DEGREE- AND CERTIFICATE-GRANTING PROGRAMS

The University of Pittsburgh offers numerous graduate degrees, first-professional degrees, and certificates in its graduate and professional schools. These degree and certificate programs are listed below.

Program	Degree(s) Offered	Academic Center ¹
Acute Care Nurse Practitioner	MSN	Nursing
Administrative and Policy Studies	MA, MEd, EdD, PhD	Education
Anatomy-Histology	Certificate	Dental Medicine
Anesthesiology	Certificate	Dental Medicine
Anthropology	MA, PhD	FAS
Applied Mathematics	MA, M	FAS
Applied Statistics	MA, MS	FAS
Area Studies	MBA/MA	Business/FAS
Asian Studies	Certificate	UCIS
Astronomy	MS, PhD	FAS
Behavioral and Community Health Sciences	MPH	GSPH
Biochemistry & Molecular Genetics	MS, PhD	Medicine
Bioengineering	MSBeng, PhD	Engineering

Program	Degree(s) Offered	Academic Center ¹
Bioethics	MA	FAS
Biological Sciences	MS, PhD	FAS
Biostatistics	MPH, MS, DrPH, PhD	GSPH
Business Administration	MBA, PhD	Business
Cell Biology and Molecular Physiology	MS, PhD	Medicine
Cellular and Molecular Pathology	MS, PhD	Medicine
Chemical Engineering	MScHE, PhD	Engineering
Chemistry	MS, PhD	FAS
Civil & Environmental Engineering	MSCEE, PhD	Engineering
Civil Litigation	Certificate	Law
Classics	MA, PhD	FAS
Clinical Cardiovascular Engineering	Certificate	Engineering
Clinical Research	MS, Certificate	Medicine
Communication Science and Disorders	MA, MS, PhD	SHRS
Computer Science	MS, PhD	FAS
Cultural Studies	Certificate	FAS
Dental Medicine	DMD	Dental Medicine
East Asian Studies	MA	FAS
Eastern European Studies	Certificate	UCIS
Economics	MA, PhD	FAS
Economic and Social Development	MPIA	GSPHA
Electrical Engineering	MSEE, PhD	Engineering
Employee Assistance Program	Certificate	Social Work
Endodontics	Certificate, MDS	Dental Medicine
English	MA, MFA, PhD	FAS
Environmental and Occupational Health	MS, MPH, PhD	GSPH
Environmental Health Risk Assessment	Certificate	GSPH
Environmental Law, Science, and Policy	Certificate	Law
Epidemiology	MPH, MS, DrPH, PhD	GSPH
Family and Marital Therapy	Certificate	Social Work
Film Studies	Certificate	FAS
French	MA, PhD	FAS
Genetic Counseling	MS	GSPH
Geology and Planetary Science	MS, PhD	FAS
German Languages & Literatures	MA, PhD	FAS
Gerontology	Certificate	Social Work
Global Political Economy	MPIA	GSPHA
Health Administration	MHA	GSPH
Health and Community Systems	MSN	Nursing
Health Law	Certificate	Law

Program	Degree(s) Offered	Academic Center¹	Program	Degree(s) Offered	Academic Center¹
Health, Physical, and Recreation Education	MS, PhD	Education	Nursing	PhD	Nursing
Health Promotion and Development	MSN	Nursing	Occupational Medicine	MPH	GSPH
Health Promotion and Education	MHPE	Education/GSPH	Occupational Therapy	MOT	SHRS
Health and Rehabilitation Sciences	MS	SHRS	Orthodontics	Certificate, MDS	Dental Medicine
Health Services Administration	DrPH	GSPH	Periodontics	MDS	Dental Medicine
Hispanic Languages & Literatures	MA, PhD	FAS	Petroleum Engineering	MSPE	Engineering
History	MA, PhD	FAS	Philosophy	MA, PhD	FAS
History & Philosophy of Science	MA, PhD	FAS	Pharmaceutical Sciences	MS, PhD	Pharmacy
History of Art & Architecture	MA, PhD	FAS	Pharmacy	PharmD	Pharmacy
Human Genetics	MS, PhD	GSPH	Physical Therapy	MPT	SHRS
Immunology	MS, PhD	Medicine	Physics	MS, PhD	FAS
Industrial Engineering	MSIE, PhD	Engineering	Policy Research and Analysis	MPA	GSPIA
Infectious Diseases & Microbiology	MPH, MS, DrPH, PhD	GSPH	Political Science	MA, PhD	FAS
Information Science	Certificate, MSIS, PhD	SIS	Prosthodontics	MDS	Dental Medicine
Instruction and Learning	MA, MAT, MEd, MS, EdD, PhD	Education	Psychology	MS, PhD	FAS
Intelligent Systems	MS, PhD	FAS	Psychology in Education	MA, MEd, PhD	Education
International Business	MBA/MIB	Business	Public and International Affairs	PhD	GSPIA
International and Comparative Law	LLM	Law	Public and Nonprofit Management	MPA	GSPIA
International and Comparative Law	Certificate	Law	Public Policy and Management	MPPM	GSPIA
Italian Languages & Literatures	MA	FAS	Radiation Health	Certificate	GSPH
Latin American Social and Public Policy	Certificate	UCIS	Rehabilitation Engineering	Certificate	Engineering
Latin American Studies	Certificate	UCIS	Rehabilitation Science	PhD	SHRS
Law	JD	Law	Rehabilitation Technology	Certificate	SHRS
Library and Information Science	Certificate, MLIS, PhD	SIS	Religion (Cooperative Program in the study of)	PhD	FAS
Linguistics	MA, PhD	FAS	Religious Studies	MA	FAS
Management of Information Systems	MS	Business	Rhetoric and Communication	MA, PhD	FAS
Management Program for Health Professionals	Certificate	Nursing/GSPH	Russian Studies	Certificate	UCIS
Manufacturing Systems Engineering	MSMfSE	Engineering	Security and Intelligence Studies	MPIA	GSPIA
Materials Science & Engineering	MSMSE, PhD	Engineering	Slavic Languages & Literatures	MA, PhD	FAS
Mathematics	MA, MS, PhD	FAS	Social Work	MSW, PhD	Social Work
Maxillofacial Prosthetics	Certificate	Dental Medicine	Sociology	MA, PhD	FAS
Mechanical Engineering	MSME, PhD	Engineering	Soviet Studies	Certificate	UCIS
Medicine	MD	Medicine	Statistics	MA, MS, PhD	FAS
Medieval and Renaissance Studies	Certificate	FAS	Studies of Law	MSL	Law
Molecular Pharmacology	MS, PhD	Medicine	Teaching English to Speakers of Other Languages	Certificate	FAS
Molecular Virology & Microbiology	MS, PhD	Medicine	Telecommunications	Certificate, MST	SIS
Multidisciplinary MPH	MPH (limited enrollment)	GSPH	Theater Arts	MA, MFA, PhD	FAS
Music	MA, PhD	FAS	Urban and Regional Affairs	MPA	GSPIA
Neurobiology	MS, PhD	Medicine	West European Studies	Certificate	UCIS
Neuroscience	MS, PhD	FAS	Women's Studies	Certificate	FAS
Nurse Anesthesia	MSN	Nursing			

¹ Acronyms for academic centers are as follows:

FAS = Faculty of Arts and Sciences

GSPH = Graduate School of Public Health

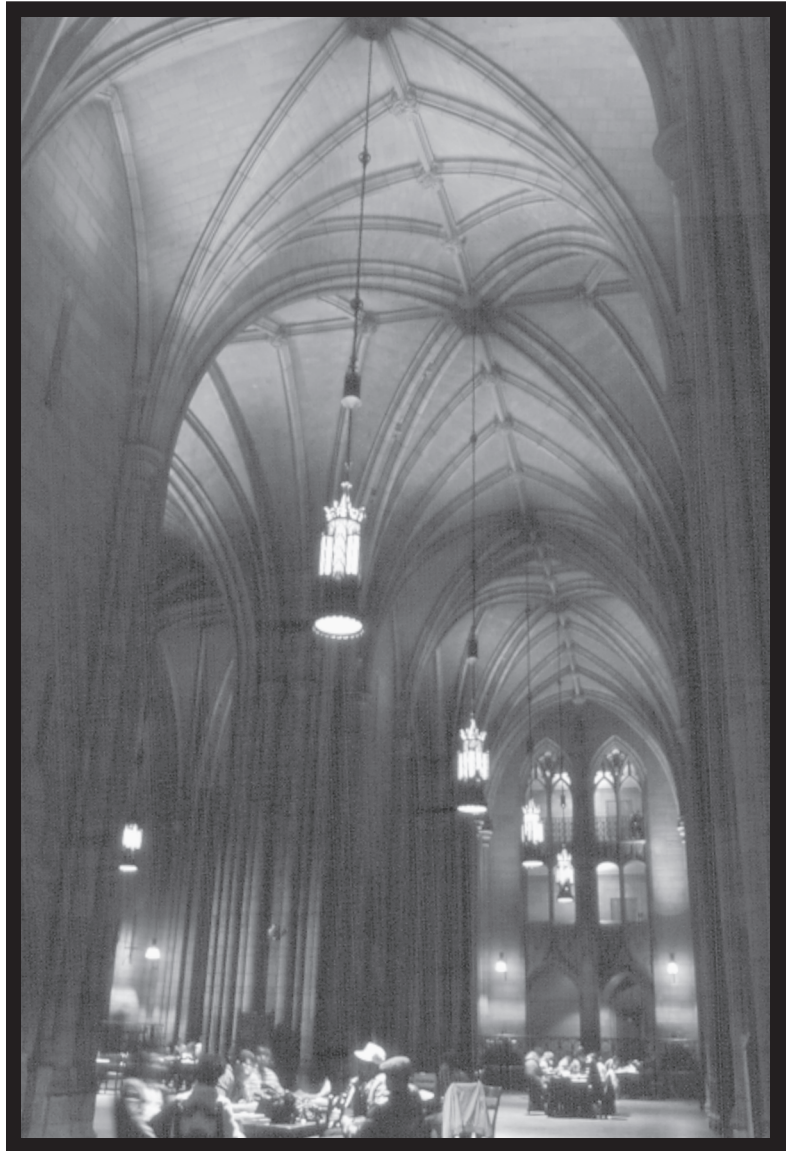
GSPIA = Graduate School of Public and International Affairs

SHRS = School of Health and Rehabilitation Sciences

SIS = School of Information Sciences

UCIS = University Center for International Studies

UNIVERSITY OF PITTSBURGH



GRADUATE PROGRAMS

FACULTY OF ARTS AND SCIENCES

Graduate programs in the **Faculty of Arts and Sciences (FAS)** are designed to prepare students for careers in research and teaching in the humanities, natural sciences, and social sciences responsive to the evolving needs of the private and public sectors of society as well as to the particular interests of academia.

FAS Graduate Studies has final approval over all admissions to graduate study in FAS and overall student appointments as Teaching Assistants, Teaching Fellows, Graduate Student Assistants, FAS Fellows, and Graduate Student Researchers, as well as responsibility for processing all related tuition scholarships. It reviews and records the academic progress of graduate students, including the passing of comprehensive examinations, admissions to doctoral candidacy, and final oral examinations. It verifies the completion of theses and dissertations, and certifies all graduate degrees awarded in the **Faculty of Arts and Sciences**.

CONTACT INFORMATION

FAS Graduate Studies consists of two offices: FAS Graduate Studies, Office of the Associate Dean, located in 928 Cathedral of Learning; and FAS Graduate Studies, Student Services, located in 322 Thackeray Hall.

Questions regarding admissions, teaching and research appointments, and programs of study should be addressed first to the individual graduate department or program. Questions regarding registration, tuition scholarships for Teaching or Research Assistants, and graduate status should be addressed to:

FAS Graduate Studies
Student Services
322 Thackeray Hall
Phone: (412) 624-6082
Fax: (412) 624-5299
E-mail: fasgrad@pitt.edu
Web site: <http://www.pitt.edu/~fasgrad>

ADMISSIONS

Students applying for admission should proceed as follows:

1. Call or write for application forms and descriptive material to the department of intended graduate study, University of Pittsburgh, Pittsburgh, PA 15260. Interested applicants are also encouraged to go to the Arts and Sciences graduate page at <http://www.pitt.edu/~fasgrad/> and visit the Web pages of their departments of interest. Students often have the option to apply online.
2. Return the completed application forms to the appropriate department with a check or money order (not cash) payable to the University of Pittsburgh for the application fee stated on the application form. If applying online, students may choose to pay the application fee by credit card. The fee is \$40. The application fee is required of all applicants; it is non-refundable and does not apply toward the payment of tuition. In exceptional cases, the application fee may be deferred (but not waived) at the discretion of the department. If the fee is deferred, and the student is admitted and accepts admission, the fee is due prior to registration.

3. No action will be taken on a request for admission to graduate study until the applicant has filed (1) the completed application; (2) the application fee; and (3) up-to-date, certified transcripts of work done in all undergraduate and graduate schools.

As stated on the application form, three letters of recommendation from persons who can evaluate the applicant's qualifications for graduate school should be sent directly to the proposed major department.

Submission of scores on the Aptitude Test of the Graduate Record Examination (GRE) is strongly recommended, particularly for those desiring financial assistance. This test is required by a majority of departments and encouraged by others. In addition, some departments may require the submission of scores on the Advanced Test of the GRE, a statement of career objectives, and/or a term paper or other sample of the applicant's written work. (For more information about the GRE, applicants should contact their undergraduate school's placement office.)

Decisions regarding admission are based upon the above credentials, grade point averages, and the availability of faculty and facilities to meet the applicant's expressed academic or research needs and interests. In most departments or programs there is limited space available, so not all qualified applicants can be admitted. In such cases, applicants will be judged competitively.

4. Students applying for fellowships and assistantships should file their applications at the earliest possible date. Applicants interested only in admission may be considered up to the deadline dates, but postponing application entails the risk that available spaces will be filled. The application deadline for the Fall Term is August 1; for the Spring Term, December 1; for the Summer Term, April 1. Individual departments may impose earlier deadlines. Registration is permitted only after admission is granted.

DEFERRED ADMISSION

Admission to graduate study is valid for the academic year. If a department so approves, a student may defer admission for one year without having to complete any additional applications. If approved, the student is sent a new admission letter. Additional course work taken during the deferred year and a new affidavit of financial support should also accompany any financial aid request. The deferral of admission is independent of financial aid.

TRANSFERRING BETWEEN FAS DEPARTMENTS

A student desiring to change a major department of graduate study in FAS must file an application for admission in the department of intended graduate study. Applications for transfer will be evaluated in the same way as applications for admission to the designated department. An application fee is not required.

ADMISSION OF INTERNATIONAL STUDENTS

Before reading the FAS-specific details below, see Graduate Admissions of International Students section, beginning on page 3, for a complete overview of University admissions requirements, including TOEFL scores, for students from other countries.

Requests for application forms should be directed to the department in which the student wishes to enroll. Applications may be downloaded

at the FAS Web site, or students may apply online using applications available at department Web sites. All applicants should take note of specific departmental requirements, in addition to those required of all international students. **FAS** Graduate Studies, Student Services in 322 Thackeray Hall, or the department will determine whether or not an applicant has sufficient proficiency in English.

INTERNATIONAL STUDENT APPLICATION DEADLINES AND APPLICATION FEE

The deadlines for submitting a completed application and financial aid form are determined by the individual departments, but the following are the final dates for international students applying for the corresponding terms:

- May 1 for Fall Term admission
- September 1 for Spring Term admission
- January 1 for Summer Term and/or Summer Session admission

The application fee for all students is \$40 U.S. The fee must be submitted in the form of a check or money order made payable to the University of Pittsburgh or may be paid using a credit card by students applying online.

ADMISSION STATUS

For an overview of the requirements for the three admission statuses—full, provisional, and special—see Admissions Status on page 4 of this bulletin. In addition to those general requirements, **FAS** also has specific regulations adherent to each status as detailed below.

■ Full Graduate Status

Only students in full graduate status may undergo preliminary evaluations, take comprehensive examinations, be advanced to degree candidacy, or receive teaching assistantships or fellowships.

■ Provisional Graduate Status

Transfer from provisional to full graduate status is possible only upon formal recommendation of the student's department and after:

- (a) removal of deficiencies noted at the time of admission, with A or B grades, and/or
- (b) completion of four courses (12 credits) for which graduate credit is earned with at least a 3.00 average

■ Special Status

A special status student who takes courses while not seeking an advanced degree may transfer up to four courses (12 credits) taken while on special status to a degree program if the student is subsequently admitted into one, and if the department recommends the transfer. A transferred course must carry a grade of B or better.

Those special status students who earn graduate credits while on temporary admission may apply those credits toward degree requirements.

EARLY ADMISSION PROGRAM

Exceptionally able students in the **College of Arts and Sciences (CAS)** of the University of Pittsburgh (QPA of 3.50 or above) with strong letters of recommendation from faculty in the department to which they are applying may be admitted to full graduate status in a department in **FAS**. At the time of admission, students must have completed 96 credits toward the baccalaureate degree, the final 30 of

which must have been taken in **CAS**, and must have satisfied the general education requirement, foreign language requirement (if any), and academic major requirements (as certified by **CAS**). *For additional information regarding requirements for the completion of the baccalaureate degree, see the CAS section in the University of Pittsburgh Undergraduate Bulletin.*

INACTIVE STATUS/READMISSION

For detailed information on what constitutes inactive registration status and requirements for readmission to active status, please see Registration Status on page 18 and Readmission on page 5, respectively.

Applications for readmission to **FAS** should be received according to the following schedule:

- Fall Term readmission applications by August 1
- Spring Term readmission applications by December 1
- Summer Term and/or Sessions by April 1

FINANCIAL ASSISTANCE

Financial assistance for graduate students is provided in the form of teaching and research appointments, fellowships, traineeships, tuition scholarships, and loans. Application for financial aid should be made on the regular Application for Admission to Graduate Study form except in special cases as noted below. All applications for financial assistance are reviewed at the departmental level and awards are made to the extent of available funds. Admission to graduate study does not carry any implications concerning the award of financial aid. Only students with full graduate status are eligible for teaching assistantships and fellowships.

Information concerning nationally competitive grants and fellowships can be obtained from **FAS** Graduate Studies, Student Services in 322 Thackeray Hall. *For general information on financial assistance above and beyond the FAS-specific information detailed below, including loans and University-wide scholarships, see Financial Aid section on page 7.*

TEACHING AND RESEARCH APPOINTMENTS

Each year about 665 graduate students receive teaching appointments in departments offering graduate degrees in the **Faculty of Arts and Sciences** and the **College of General Studies**. In addition to financial support and medical coverage, these appointments provide teaching experience and further professional development.

In recognition of academic merit, the University offers Teaching Assistants, Teaching Fellows, Graduate Student Assistants, and Graduate Student Researchers full or proportional tuition scholarships, and students are required to register for the number of credits proportional to appointment. If appointed in the Summer Term, students should register for a minimum of three credits (or full-time dissertation study, if eligible), unless additional registration is needed for academic purposes.

Information regarding TA/TF/GSA/GSR policies is available at **FAS** Graduate Studies, Student Services in 322 Thackeray Hall. *For further information on these positions and general descriptions of each appointment's job requirements, see Teaching and Research Appointments on page 7 of this bulletin.*

■ Teaching Assistants (TA)

For completion of services requiring approximately 20 hours per week, a TA receives a salary of \$11,520 (2000-2001) for two terms. Two-term TAs who want to receive their salary spread out across three terms should contact their department immediately.

■ Teaching Fellows (TF)

For teaching services, requiring about 20 hours per week, a TF receives a salary of \$11,985 (2000-2001) for two terms. Two-term TFs who want to receive their salary spread out across three terms should contact their department immediately.

■ Graduate Student Assistants (GSA)

A few graduate student assistantships are available in FAS. A GSA usually assists a faculty member in library research, editorial duties, or similar academic tasks. For such services, requiring about 20 hours per week, a GSA receives \$9,400 (2000-2001) for two terms.

■ Graduate Student Researchers (GSR)

The GSRs work under the direct supervision of and are appointed by the principal investigator (or associate) of a funded research project. Their stipends are determined by the terms of the grant within guidelines set by the Associate Dean for Graduate Studies and Research. For 1999-2000, the stipends range from \$4,500 to \$5,785 per term.

■ Fellowships and Traineeships

The following are fellowships and traineeships available to students in the **Faculty of Arts and Sciences**.

Andrew Mellon Fellowships:

About 48 Andrew Mellon Fellowships are awarded each year to graduate students who are enrolled in programs leading to the PhD degree or who are applying for admission to such programs.

This award provides a stipend of \$14,500 (2000-2001) and a full tuition scholarship for two terms. Awardees may elect to receive the stipend over a period of either two or three terms. They may elect to participate in the medical insurance plan available to TA/TF/GSAs and GSRs, but must pay the premium costs themselves through payroll deduction.

Application forms are available in November in FAS Graduate Studies, Student Services, 322 Thackeray Hall, and along with supporting documents, they should be returned by January 15 according to the directions on the application form. Awards are announced by March 1.

Awards are made on an annual basis, and they may be renewed one time except by first-year students who are current Mellon Fellows. An awardee who wishes a renewal must file a new application form with supporting material, including progress made while holding a Mellon Fellowship. Transcripts from other institutions submitted previously need not be resubmitted. Awardees will be evaluated on overall merit and on progress made toward the PhD during their fellowship year.

Nancy Anderson Memorial Fellowship in English Literature:

This fellowship is awarded annually by the Department of English to an outstanding new or continuing graduate student. The award includes a stipend and a partial tuition scholarship.

Anna Margaret and Mary Sloan Fellowships in Philosophy or Psychology:

A fellowship of approximately \$6,700 is available annually under the terms of the Anna Margaret and Mary Sloan Fellowship Fund to a

woman who is engaged in full-time study in Philosophy or Psychology. A full tuition scholarship for two terms accompanies this award. Applications and supporting credentials must be received in 322 Thackeray Hall by March 15; the award will be announced on April 15.

Carolyn Chambers Memorial Fellowship:

This fellowship is awarded annually to an advanced graduate student pursuing the PhD degree in English or History who shows potential for an outstanding career in teaching and scholarship. The award is a four-month fellowship, to be held either in the Fall or Spring Term and consists of a stipend of approximately \$5,400 and a full-tuition scholarship for one term.

Chancellor's Fellowship in Chinese Studies:

A fellowship, renewable up to three years, is awarded annually to an outstanding PhD candidate specializing in Chinese studies. The award includes both tuition scholarship and stipend of \$10,780 covering two terms of graduate study. Students applying for or admitted to PhD candidacy in any department are eligible for this award. Applicants should have completed at least two years of Chinese language study or the equivalent by the inception of the award period. Application forms are available from the Asian Studies Program, 4E05 Posvar Hall. Applications are due by January 15.

Daniel Fellowships:

Each year the Zaccheus Daniel Foundation awards several fellowships to qualified students enrolled in a PhD program in astronomy. In order to be a recipient of the fellowship, the candidate must be a full-time student and must be recommended by the department. Interested students should address their application for a Daniel Fellowship to the Zaccheus Daniel Foundation, c/o the Department of Physics and Astronomy; University of Pittsburgh; Pittsburgh, PA 15260.

Equal Opportunity Professional Education Program:

This program provides financial assistance for graduates of Cheyney and Lincoln Universities who are attending professional and graduate schools at the University of Pittsburgh. The program's tuition scholarships support the Commonwealth's commitment to achieve the goals of equal opportunity for all Pennsylvanians. Information can be obtained in the Office of Affirmative Action, 901 William Pitt Union.

FAS Fellowships:

Approximately 50 FAS Fellowships are allocated to FAS departments by the Associate Dean of Graduate Studies as recruitment tools for their graduate programs. They carry a stipend of \$13,200 (2000-2001) and tuition support for two terms. Awardees may elect to participate in the medical insurance plan available to TA/TF/GSRs, but must pay the premium costs themselves through payroll deduction. Departments may use these funds as enhancements for other forms of financial support they control to attract students with particularly strong academic records to their graduate programs.

FAS/Provost Development Fellowships and K. Leroy Irvis Fellowships:

This program provides highly qualified incoming students from under-represented groups in academia with a stipend equivalent to a teaching assistantship plus a tuition scholarship for one or two years, during which time the student will engage in a collaborative research project with a faculty mentor. This award is contingent on the guarantee that the student's graduate department will provide full funding for an additional two years, should the student meet the academic standards established by the department. These fellowships are designed to offer students from under-represented groups a combination of research and teaching experience under close faculty supervision for a total of three or four years in order to integrate minority students into the

professoriate. Approximately 14 students a year will be funded as FAS/Provost Development Fellows or K. Leroy Irvis Fellows. The six candidates with the strongest academic records will be designated as K. Leroy Irvis Fellows. For more information, contact the department of interest for graduate study. Applications for funding are to be submitted by the department chair to the Assistant Dean of Graduate Studies, 322 Thackeray Hall.

Foreign Language and Area Studies Fellowships (FLAS):

Each year the U.S. Department of Education awards to the University a limited number of FLAS Fellowships for students working in the language and Area Studies programs under the **University Center for International Studies** or who are enrolled in a graduate department and whose work is focused on the world areas of Asia, Latin America, or Russia and Eastern Europe. Descriptions of the programs and information about the fellowships can be obtained by writing to the respective area Program Director, **University Center for International Studies**, Suite 4G Posvar Hall.

Graduate Tuition Scholarships:

Each term a few graduate tuition scholarships are awarded to advanced graduate students by the Associate Dean for Graduate Studies and Research on the recommendation of individual departments. Scholarships are granted on the basis of the applicant's scholastic ability and need. Application forms are available in FAS Graduate Studies, Office of the Associate Dean, 928 Cathedral of Learning.

Japan Iron and Steel Federation Fellowship in Japanese Studies:

The Japan Council of the Asian Studies Program awards a fellowship of \$11,000 plus tuition annually to an outstanding graduate student of Japanese studies who enrolls in a social science or humanities department. Applicants must have completed at least two years of Japanese language study or the equivalent by the inception of the award period. Application forms are available from the Asian Studies Program, 4E38 Posvar Hall. Applications and supporting credentials must be received by February 1.

Lillian B. Lawler Scholarships/Fellowships:

A gift from the Lillian B. Lawler estate makes it possible to offer two predoctoral fellowships/scholarships of \$14,500 (2000-2001) to graduate students in the foreign language, Classics, English, or History departments. Priority is given to students in need of financial assistance. The amount of the award will be indicated on the application. Application forms can be obtained from FAS Graduate Studies, Student Services; 322 Thackeray Hall; University of Pittsburgh; Pittsburgh, PA 15260. The deadline is January 15.

Robert S. Marshall Memorial Fellowship in Classics:

Fellowships of \$14,500 (2000-2001) are occasionally awarded by the Department of Classics from the Robert S. Marshall Memorial Fund. Graduate tuition scholarships for two terms accompany these awards. Applications and supporting credentials must be received by the Chair, Department of Classics, by February 1. The awards are announced by April 1.

Ivy McManus Memorial Scholarship in Biological Sciences:

A scholarship of \$2,000 is awarded annually to an outstanding woman who has completed her first year of graduate study. Contact the Department of Biological Sciences; University of Pittsburgh; Pittsburgh, PA 15260, for more information or an application.

Mellon Fellowships in Humanistic Studies:

The University of Pittsburgh participates in this fellowship program administered by the Woodrow Wilson National Fellowship Foundation.

Undergraduate students in the humanities may apply directly to that foundation for graduate fellowships. Please call (800) 899-9963 for more information or application materials.

National Science Foundation Fellowships:

The University of Pittsburgh participates in the programs of the National Science Foundation. Students who have completed fewer than 20 graduate semester hours are eligible to apply directly to the National Science Foundation for graduate fellowships. Interested students should call the National Science Foundation at (703) 306-1694 or send E-mail to grfp@nsf.gov for more information or application materials.

Provost's Development Fund:

This program is intended to provide financial support and development opportunities for women, minorities, and disadvantaged students pursuing the doctorate or a professional degree that would qualify them for an academic or administrative appointment. Financial assistance will be made available on the basis of need and merit. Any U.S. citizen or permanent resident who is enrolled in or admitted to a graduate program is eligible. Ideally, the candidate should be in the advanced stages of the PhD program so that support for one year would complete the program. Applications are available in the Office of the Provost, 801 Cathedral of Learning; and in FAS Graduate Studies, Office of the Associate Dean, 928 Cathedral of Learning.

Provost's Humanities Fellowships:

Two fellowships of \$14,500 (2000-2001) each are awarded annually to graduate students of high academic merit pursuing work in the humanities. This award provides a full tuition scholarship for two terms. Awardees may elect to receive the stipend over a period of either two or three terms. Preference is given to entering first-year students. Application forms are available in September in 322 Thackeray Hall. Deadline for application is January 15.

United States-Japan Industry and Technology Management Training Program:

The Asian Studies Program administers a new management training program in Japanese language and culture for scientists and engineers. Funded by the U.S. Air Force Office of Scientific Research, it will award fellowship support for the program to students in the sciences and engineering to enable them to do intensive or regular study of the Japanese language and culture, followed by internship support for them to work in Japan for a year. Previous Japanese language training is not a prerequisite. For more information, please contact the program's Project Director either by mail or fax: Asian Studies Program, **University Center for International Studies**, 4E05 Posvar Hall, Pittsburgh, PA 15260. The fax number is (412) 648-2199.

University of Bonn Exchange Fellowships:

The **University Center for International Studies** administers a yearly exchange program with the University of Bonn in Germany. Graduating seniors and graduate students from any department at the University of Pittsburgh are eligible to apply. The grant pays living expenses only, but candidates are eligible to apply for the Fulbright Travel Grant for transportation costs. For application and further information regarding deadlines contact the Study Abroad Office, 802 William Pitt Union.

Mary E. Wurga Predoctoral Fellowship:

The Chemistry Department and the Department of Physics and Astronomy at the University of Pittsburgh offer a predoctoral fellowship for an entering female graduate student. The Wurga Fellowship will be awarded on a competitive basis, with all qualified

female applicants who are U.S. citizens being automatically entered into the pool.

The fellowship provides a two-term stipend totaling \$16,000 (2000-2001) with the third term supported by teaching or research, if needed. It also provides a full tuition scholarship and \$2,000 supplemental funds to be used for travel, research, and other professional expenses over the first four years of graduate study in the department. The stipend and scholarship are renewable for a second year contingent upon satisfactory graduate performance. Additional supplemental funds may be provided by the department.

ACADEMIC STANDARDS

In addition to those University-wide regulations and standards detailed in the section on General Academic Regulations, beginning on page 17 of this bulletin, each student in **FAS** is expected to be familiar with these school-specific regulations and academic standards:

CREDITS AND GRADE POINTS

Courses for which G, I, N, R, or W is recorded and courses numbered below 1000 (0-0999) do not contribute either credits or grade points toward graduation. When a course is repeated, only the last grade and credits are used to calculate QPA.

Students must achieve the minimum QPA established by their departments, in no case less than 3.00, in order to be eligible to retain teaching assistantships or fellowships, to undergo the preliminary evaluations, to take comprehensive examinations, to be admitted to candidacy for the PhD degree, and to graduate.

Independent study and individual thesis and dissertation research must be graded using the S/N option 2 and thus are not used in the calculation of the QPA required for continuation in good academic standing.

ACADEMIC PROBATION AND DISMISSAL

A graduate student who fails to maintain an overall QPA of 3.00 or to make satisfactory progress in a degree program is subject to dismissal from graduate study at the University. When the overall QPA of a student falls below 3.00, the student is automatically placed on academic probation; is not eligible for a teaching assistantship, fellowship, or participation in the department comprehensive examination; and is subject to dismissal at the end of the following term. The department should so warn the student in writing.

In addition, any student who is not making satisfactory progress toward the completion of an advanced degree (completion of an acceptable number of required courses and/or research each term or year) may be placed on academic probation by the department. The student must be informed in writing of this action by the department. Normally, one term will be granted in which to correct the deficiency.

A student whose performance on a preliminary or comprehensive examination is judged to be inadequate may be subject to dismissal at the end of the term.

WITHDRAWAL FROM COURSES

Students may add or drop courses before the end of the add/drop period. A student who wishes to withdraw from an individual course after the add/drop period must complete a Monitored Withdrawal form available from the dean of the school offering the course, obtain the signature of the instructor, and return the completed form to the Assistant Dean of Graduate Studies, 322 Thackeray Hall. A W grade will then be issued.

Students may terminate their registration in all classes by informing the Office of the Registrar of their intent to do so prior to the end of the add/drop period for the term. Students registered for courses scheduled to begin after the end of the add/drop period for the term may terminate their registration by informing the Office of the Registrar of their intent to do so at any time prior to the first scheduled meeting day of the class. A student who stops attending a course and does not initiate the withdrawal or resignation procedures may be assigned an F grade.

REPETITION OF COURSES

A student may repeat any course in which a grade of B- or lower is received if authorization is given by the student's department. When a graduate student repeats a course in which the subject matter has not changed, only the last grade received is counted in computing the grade point average. A Course Repeat form must be filed with **FAS** Graduate Studies, Student Services, 322 Thackeray Hall, to initiate proper computing of the grade point average.

GRADE CHANGES

A grade given by an instructor for completed work will not be changed unless an error has been made in reporting or recording the grade. (Re-examination or extra work may not be used as a basis for a change of grade.) A Grade Change Request form must be filed with **FAS** Graduate Studies, Student Services, 322 Thackeray Hall, and approved by the Assistant Dean of Graduate Studies.

INDEPENDENT STUDY

Students who are using University facilities to an extent greater than represented by their formal course load (and those students required by a fellowship or other appointment to be full-time students) are required to register for an appropriate number of additional credits of Independent Study to reflect their correct status. All graduate study not under the direct supervision of a specific faculty member is, by definition, Independent Study, course number 2990 in each program. This includes study for preliminary evaluations, comprehensive and overview examinations, the preparation of research proposals, etc. Only the S/N Grade Option may be used in a 2990 course.

DIRECTED STUDY

Registration for Directed Study is limited to students in good academic standing and normally beyond their first year of graduate study who wish to study or carry out a project in an area not available in a formal course. The work must be under the direct supervision of a faculty member who has approved the proposed work in advance of registration. A brief description of the work should be recorded in the student's file in the department. Either a letter grade or the S/N option may be used to evaluate the quality of work performed by the student, and both the credits and the grade points (if any) will be used in determining the academic standing of the student.

TRANSFER CREDITS

Students may transfer credits earned at another accredited institution in an approved degree-granting graduate program toward the requirements for an advanced degree at the University of Pittsburgh. Students requesting advanced-standing credits by transfer should indicate this within the first year of graduate study and provide official transcripts. The department evaluates each applicant's credentials and indicates to the student at the time of admission its recommendation to the Assistant Dean of Graduate Studies concerning advanced-standing credit. Students requesting transfer credits from international graduate programs must submit their request to the Office of International Services (708 WPU) before their department can evaluate the credits for transfer. Students admitted with special or provisional

status cannot transfer credits until full status has been granted. Graduate students already enrolled, when approved in advance by their department and the Assistant Dean of Graduate Studies, may spend a term or more at another graduate institution to obtain training or experience not available at the University of Pittsburgh and may transfer those credits toward the requirements for an advanced degree at the University of Pittsburgh.

A maximum of six credits may be accepted by transfer toward the requirements for the master's degree. A maximum of 24 credits may be transferred toward the requirements for the PhD degree for course work at the master's level earned in another approved graduate school. A student who transfers 24 credits due to completion of a master's degree at another institution is not eligible to earn a master's degree in that discipline at the University of Pittsburgh. If a student has completed relevant graduate work beyond the master's level at another institution, up to 12 additional credits may be accepted for transfer. (No more than 36 credits can be accepted for transfer from all other graduate institutions.) Acceptance of credits by transfer from other graduate schools does not relieve the student from the requirement to register at the University of Pittsburgh and satisfactorily complete a minimum of 18 credits for a master's degree and a minimum of 36 credits for a PhD degree.

For further detail on University requirements on transfer credits, see Acceptance of Transfer Credits on page 17.

REGISTRATION OF UNDERGRADUATE STUDENTS FOR GRADUATE CREDIT

A University of Pittsburgh undergraduate student who needs fewer than 15 credits to complete requirements for the baccalaureate degree and who intends to continue study toward an advanced degree in FAS may be permitted, during his/her final term, to register for one or two courses at the 2000 level for credit toward a graduate degree. The student must obtain written permission from an FAS department admissions officer that the course may count when and if the student is admitted into the degree program. This privilege should not be granted if the proposed total course program exceeds a normal full-time load or if the courses are required for the undergraduate degree. When the student registers for graduate study at the University, these graduate credits and grades may be transferred to the graduate transcript upon recommendation of the department and approval by the Assistant Dean of Graduate Studies. No more than six credits can be transferred in this manner.

STATUTE OF LIMITATIONS AND LEAVES OF ABSENCE

All regulations regarding the statute of limitations for completion of degree requirements and leaves of absence are detailed under Statute of Limitation/Leaves of Absence on page 26 of this bulletin. Variations and additions to those rules within FAS are as follows:

Requirements for the master's degree should be completed within a period of four consecutive calendar years from the student's initial registration for graduate study. Some departments may have a more stringent statute of limitations for completion of master's or doctoral degrees. There is also a strictly enforced seven-calendar-year limit on the PhD comprehensive examination for students entering graduate study programs in Fall 1999 or later. (Ten-year limits on PhD comprehensive examinations apply for students enrolled prior to Fall 1999.) If the student has not completed all requirements for the degree within that limit, the comprehensive examination must be retaken.

Under exceptional circumstances a candidate for an advanced degree may apply for an extension of the statute of limitations. Applications—available in the department or in FAS Graduate Studies, Student Services (322 Thackeray Hall)—must state the reason for the delay, provide evidence of continuing progress toward the completion of the degree, and include a plan and proposed date for completion. The request must be approved by the chair of the student's doctoral or master's committee and the department chair or director of graduate studies and be submitted to the Assistant Dean of Graduate Studies for final action. Each student who requests an extension of the statute of limitations must be able to demonstrate proper preparation for the completion of all current degree requirements. There is no extension on the seven-year limit for the PhD comprehensive examination.

Under special conditions, graduate students may be granted a leave of absence. Only one leave of absence can be obtained by a student during his/her graduate career. Readmission following an approved leave of absence is a formality.

ADVISING AND PLACEMENT

Advising and placement services in FAS graduate programs are conducted within the various departments and programs. Students should consult department handbooks, their departmental advisor, their departmental director of graduate studies, their departmental graduate secretary, and/or chair for details. The FAS Graduate Studies Office makes every effort to keep advising and placement in the forefront of departmental concerns. All departments are responsible, with FAS oversight, for implementing policies and practices consistent with the University's in *Elements of Good Academic Advising*, found on the University's Web pages at <http://www.pitt.edu/~provost/advising.html>. Unresolved problems relating to the advising of graduate students at the department level can be taken to the Assistant Dean of Graduate Studies and Research in FAS Graduate Studies, Student Services, 322 Thackeray Hall.

FAS DEGREE REQUIREMENTS

The general requirements for the master's degrees and doctoral degrees are detailed under Regulations Pertaining to Master of Arts and Master of Science Degrees on page 21, Regulations Pertaining to Professional Master's Degrees (including the MFA) on page 22, and Regulations Pertaining to Doctoral Degrees on page 23. For further FAS-specific requirements, see below. Once the University-wide requirements and the FAS Degree Requirements below have been reviewed, see the relevant departmental description for more specific detail.

REQUIREMENTS FOR THE MA, MS, AND MFA DEGREES

The minimum requirement for the Master of Art and Master of Science degrees is 24 credits beyond the baccalaureate degree. Furthermore, the MFA, as a professional degree, requires a minimum of 30 credits. Not more than six credits may be granted toward the completion of the requirements for a master's degree for work completed at another accredited graduate institution. Most programs require more than this minimum.

CREDIT REQUIREMENTS

In addition to the general credit requirements detailed under MA and MS Requirements on page 22 at the front of this bulletin, the following requirements must be satisfied:

- All courses from the 2000 or 3000 series must be completed with an average grade of B (3.00)
- Registration for research or independent study cannot be included among the minimum of 12 credits that must be taken from the 2000 or 3000 series

FOREIGN LANGUAGE REQUIREMENT

The requirement of proficiency in foreign languages is at the discretion of individual departments.

COMPREHENSIVE EXAMINATION

Whenever a program substitutes an equivalent requirement for the comprehensive examination, the department or program must obtain prior approval from the FAS Graduate Council and notify the University Council on Graduate Study and describe the situation. Students on inactive, special, or provisional status, or who have a QPA less than 3.00, are not eligible to take the comprehensive examination. *See Comprehensive Examination under Regulations Pertaining to Master of Arts and Master of Science Degrees on page 21 for further detail on requirements for comprehensive exams.*

THESIS

The requirement of a thesis or its equivalent is at the discretion of individual departments. If a thesis is submitted, its form must be in accord with specifications available from the *Style and Form Manual* and approved by the Assistant Dean of Graduate Studies. A report of the final oral examination in defense of the master's thesis must be filed in 322 Thackeray Hall. *For further information on thesis requirements, including the make up of the thesis committee, see Thesis Option on page 22 under Regulations Pertaining to Master of Art and Master of Science Degrees.*

APPLICATION FOR GRADUATION

Each candidate for graduation must file an official Application for Graduation in 322 Thackeray Hall, early in the term in which graduation is expected. (See the Academic Calendar for deadline dates.) *See Graduation on page 26 for further details on graduation and graduation requirements.*

GRADUATION CERTIFICATION

The faculty of the department evaluates the performance in course work and on comprehensive examinations. If the candidate's performance is satisfactory and all degree requirements have been met, a letter must be submitted to the Associate Dean for Graduate Studies and Research, on behalf of the department, certifying that the candidate has completed all requirements for a master's degree and indicating whether or not the candidate is recommended to proceed to doctoral study.

REQUIREMENTS FOR THE PHD DEGREE

An overview of the University requirements for the PhD degree is presented in Regulations Pertaining to Doctoral Degrees on page 23. FAS-specific requirements are detailed below.

CREDIT REQUIREMENTS

The minimum requirement for the PhD degree of 72 credits may be earned in formal course work, directed study, independent study, and/or thesis and dissertation research.

COURSE REQUIREMENTS

No course numbered below 1000 may be applied toward a graduate degree.

Students must achieve the minimum QPA established by their departments, in no case less than 3.00, to be eligible to undergo the preliminary examination, to take the comprehensive examination, to be admitted to candidacy for the PhD degree, and to be graduated.

FOREIGN LANGUAGE AND/OR OTHER TOOLS OF RESEARCH

The requirement of proficiency in the use of foreign languages or other tools of research is at the discretion of individual departments. The foreign language departments have the capacity to evaluate foreign language proficiency and will be available to so certify.

PRELIMINARY EXAMINATION

The nature of the preliminary examination/evaluation and the time when it is conducted are determined by each department. In some programs, the preliminary doctoral exam/evaluation may be combined with a master's comprehensive examination. *See Preliminary Evaluation on page 24 under Regulations Pertaining to Doctoral Study for further detail on regulations pertaining to the exam.*

COMPREHENSIVE EXAMINATION

Comprehensive examination results must be reported promptly to FAS Graduate Studies, Student Services (322 Thackeray Hall), and no later than the last day of the term in which the examination is administered. *See Comprehensive Examination on page 24 under Regulations Pertaining to Doctoral Study for further detail on regulations regarding the exam.*

DOCTORAL COMMITTEE

Upon the successful completion of the comprehensive examination, the student and his/her advisor should propose a doctoral committee for approval by the Department Chair. The doctoral committee shall consist of at least three Graduate Faculty members from the student's department of graduate study, including the graduate advisor, and one Graduate Faculty member from another department of the University or from another university. (A list of the University's Graduate Faculty is available online at <http://www.ba.pitt.edu/irweb/gradfac/homepg.htm>.) If a member of the Graduate Faculty from another university is selected, she or he must be approved in advance by the Assistant Dean of Graduate Studies. This person should be selected on the basis of contributions he or she can make by virtue of the particular areas of scholarly interest or expertise relevant to the dissertation topic. In addition, a scholar with special competence in the area of research of the dissertation may be appointed as an official member of the doctoral committee. A request for approval of a member from another university should include a cover letter stating the justification for the appointment and a current curriculum vitae. Many departments require a committee of five members.

For further detail on the committee's duties, see Doctoral Committee on page 24 under Regulations Pertaining to Doctoral Study.

ADMISSION TO CANDIDACY FOR THE PHD DEGREE

After completion of the overview, the student should, in consultation with his/her major advisor, file the application for admission to candidacy for the Doctor of Philosophy degree. Students are informed of admission to candidacy by written notification from the Assistant Dean of Graduate Studies. When the topic has been accepted and the proposed doctoral committee has been approved by the Department Chair and the Assistant Dean of Graduate Studies, the student will be informed of admission to candidacy and of the membership of the doctoral committee. *For a listing of requirements for admission to candidacy, see Admission to Candidacy for the Doctor of Philosophy Degree on page 25.*

Admission to candidacy must be at least eight months before the defense of the dissertation in order to provide an opportunity for the members of the doctoral committee to review, criticize, and monitor the proposed research.

Meetings of the doctoral candidate and his/her dissertation committee must occur at least annually from the time the student gains admission to doctoral candidacy. A record of such meetings must be maintained in the student's file in the department.

DISSERTATION

See *Dissertation and Abstract on page 25 for an overview of requirements and form for the dissertation and abstract*. In addition, students in FAS should note that photocopies of journal articles may be used only in the appendix and only if necessary.

■ Language of the Doctoral Dissertation

The language in which doctoral dissertations are written shall normally be English. Exceptions may be granted for graduate students in foreign language departments but only for sound reasons of scholarship. Permission shall never be granted on the grounds of inadequate command of English. A student who wishes to write a dissertation in a foreign language shall apply formally to his/her department chair for permission. The application must be approved by the Assistant Dean of Graduate Studies at the time of admission to candidacy. For approval, the following requirements must have been met:

- (1) The application must be recommended for approval by the department.
- (2) All members of the doctoral committee must have an adequate command of the language.
- (3) The student must have demonstrated full proficiency in English to the satisfaction of the Assistant Dean of Graduate Studies.

Dissertation abstracts shall in any case be in English. The final oral examination must be conducted in English.

FINAL ORAL EXAMINATION

Students preparing to take their final oral examination in defense of their dissertation should refer to Final Oral Examination on page 25 under Regulations Pertaining to Doctoral Degrees for details on the exam. Expansions on and additions to that information are given below.

Each candidate for a doctoral degree must provide a suitable number of copies of the dissertation, as designated by his/her doctoral committee, for review and use during the final oral examination.

One copy of the dissertation must be submitted to each member of the doctoral committee at least two weeks before the date set for the final oral examination. All members of the doctoral committee must attend the examination; exceptions can be made only with the permission of the Assistant Dean of Graduate Studies. At least four weeks before the final examination, the chair of the doctoral committee must provide the Assistant Dean of Graduate Studies with a typewritten notice, listing the title of the dissertation and the time and place for its defense, for announcement in the *University Times*. A report of this examination and a report on approval of the dissertation, signed by all members of the doctoral committee, must be sent to the Assistant Dean of Graduate Studies for approval. The report on the approval of the dissertation may be signed concurrently with or subsequently to the report of the final oral examination. If the decision of the committee is not

unanimous, the case is referred to the Assistant Dean of Graduate Studies for resolution.

When the examination is completed, the candidate must deposit with the Assistant Dean of Graduate Studies one copy of the approved complete dissertation plus three copies of an abstract of the dissertation signed by the dissertation advisor. These documents must have been prepared for publication in accord with instructions furnished by FAS Graduate Studies, Student Services (322 Thackeray Hall). Each candidate must execute an agreement with University Microfilms International for the publication of the dissertation on microfilm and for publication of the abstract in *Dissertation Abstracts*; respond to the *Survey of Earned Doctorates*; and present a Thesis/Binding Microfilm Fees Receipt when the dissertation is deposited in 322 Thackeray Hall.

MULTIPLE DEGREE OPTIONS

Students in FAS have several options for dual- and joint-degrees that may be pursued as detailed below. Students also may pursue two independent degree programs simultaneously, either in two departments within FAS or in a department within FAS and a department in another school at the University. *For information on pursuing two independent degrees simultaneously, see Two Independent Degree Programs Simultaneously on page 30 under Special Academic Opportunities.*

DUAL-DEGREE PROGRAMS

FAS dual-degree programs are available only in mathematics and computer science. For further details, contact one of those departments and see *Cooperative-, Dual-, and Joint-Degree Programs on page 30.*

JOINT-DEGREE PROGRAMS

There are three joint-degree programs involving FAS:

- (1) The MD/PhD program offers selected students an opportunity to earn MD and PhD degrees simultaneously from the **School of Medicine** and certain departments in FAS. Interested applicants should contact the MD/PhD program at M211 Scaife Hall, (412) 648-2324 for further information.
- (2) The MBA/MA in Area Studies program provides students who are admitted to the MBA program in the **Joseph M. Katz Graduate School of Business** an opportunity to earn a joint MA in Area Studies with foci in Asian Studies, Latin American Studies, Russian and East European Studies, or West European Studies. Interested students should contact the International Business Center, 355 Mervis Hall, (412) 648-1509 for further information.
- (3) The JD/MA program offers selected students the opportunity to earn the JD and the interdisciplinary MA degree in Bioethics. Interested students should see the Bioethics section of this bulletin or call the **School of Law** at (412) 648-1415.

In both the dual- and joint-degree programs, students must be admitted to both academic programs offering the degrees and must be graduated from both degree programs at the same time. *For further details, see Cooperative-, Dual-, and Joint-Degree Programs on page 30.*

CERTIFICATE PROGRAMS

A variety of interdisciplinary programs leading to completion of a certificate may be pursued by students working toward a master's degree or doctorate in FAS. Program descriptions are outlined under the relevant program.

DEPARTMENT AND PROGRAM DESCRIPTIONS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with specific departmental and program requirements.

Courses numbered from 1000 to 1999, inclusive, are primarily advanced undergraduate courses, but under appropriate circumstances they may be taken for graduate credit. All courses numbered 2000 and above are open only to graduate students unless special permission is granted.

Descriptions of graduate courses offered in a particular term in departments of the **Faculty of Arts and Sciences** are given in the *Course Descriptions* issued each term just prior to registration. Copies can be obtained in departmental offices and in 140 Thackeray Hall.

ANTHROPOLOGY

The Department of Anthropology takes a four-field approach, offering graduate training in cultural anthropology, archeology, physical anthropology, and linguistics. There are special programs in Latin American archeology, medical anthropology, conflict studies, and human evolutionary biology. Geographical emphasis is on Latin America, Asia and the Pacific Islands, Melanesia, Eastern Europe, and the United States. Among the research topics of faculty in social and cultural anthropology are urban and development studies, economic anthropology, demography, medical anthropology, legal and political anthropology, family and kinship, and religion and symbolism. Physical anthropology specialties include experimental study of morphology and behavior, development of cranio-facial structures, hominoid evolution, and evolution of behavior. Opportunities in linguistics are offered in cooperation with the Department of Linguistics, and are especially focused on Latin American Indian languages. Archeology stresses the empirical investigation of models of the origins and development of prehistoric complex societies. Training in cultural resources management and field training are available.

Strong ties to other departments in the **Faculty of Arts and Sciences** and to other schools in the University provide for interdisciplinary study and research. Laboratories for archeology are maintained in the department. There are physical anthropology laboratories for paleontology, behavioral and environmental studies, primate research, and histology. Computer facilities are provided in the department and are integrated into all laboratories. A cooperative relationship with the Carnegie Museum of Natural History provides expertise, facilities, and training in museology.

CONTACT INFORMATION

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 Main Office: 3H01 Posvar Hall
 Phone: (412) 648-7500
 Fax: (412) 648-7535
 E-mail: drennan+@pitt.edu
 Web site: <http://www.pitt.edu/~pittanth>

ADMISSIONS

Entrance into programs leading to the MA and PhD degrees in Anthropology requires a baccalaureate degree in one of the arts or sciences from an accredited institution of higher learning. Qualified students from any discipline are considered for admission. Applicants must submit Graduate Record Examination scores.

FINANCIAL ASSISTANCE

Graduate student financial support awarded to PhD students by the Department of Anthropology includes fellowships, teaching assistantships and fellowships, research assistantships, and Heinz and Mellon Fellowships in Latin American archeology.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with specific departmental degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

The MA degree program is separate from the PhD program; MA students should read the PhD requirements for additional clarification of certain requirements.

COURSE CREDITS

A minimum of 30 course credits in anthropology is required for the MA degree. Of these, at least 21 credits must be in formal courses (as opposed to readings courses, independent study, or thesis credits). At least 12 of these 21 must be courses at the 2000 level. If the student is accepted at a later date into the PhD program, courses taken toward the MA will satisfy doctoral degree credit and residency requirements. The student may petition the Committee on Graduate Studies to accept a maximum of six credits earned in another approved graduate school or courses taken in another department toward the total of 30 credits.

ADVISORY COMMITTEE

By the end of the first year, the student establishes an advisory/evaluation committee consisting of at least two Graduate Faculty members from the Department of Anthropology, including the student's advisor, plus at least one additional Graduate Faculty member who may be either from the Department of Anthropology or from another department. This committee will supervise and evaluate the MA paper. The student should request the Committee on Graduate Studies' approval of the composition of the advisory committee.

CORE COURSE REQUIREMENT

Full-time MA students must pass the core course in their declared subfield by the end of their second term in residence (or, for part-time students, before they have completed 18 credits). An MA student specializing in a focused area within anthropology can petition the Committee on Graduate Studies for a specialized written examination (administered by his/her MA committee) in lieu of the core course. However, if such a student subsequently enrolls in the PhD program, the specialized MA exam will not substitute for the core course in the student's area of study.

LANGUAGE REQUIREMENT

Same as for the PhD program. See below.

METHOD/THEORY REQUIREMENTS

Students in archeology must pass ANTH 2534 or 2524 with a B- or better. They may petition the Committee on Graduate Studies to accept another course in quantitative methods in lieu of these. Students in physical anthropology or linguistics must pass with a B- or better one course in quantitative methods selected from among those offered in the Department of Anthropology or elsewhere. They must petition the Committee on Graduate Studies for approval of this course. Students in cultural anthropology must pass with a B- or better one methods course approved by the Committee on Graduate Studies and ANTH 2750 or a comparable seminar approved for this purpose by the Committee on Graduate Studies (*see the Method/Theory Requirements for the PhD*).

■ MA Paper

The student plans an original research paper with his/her advisory committee. This committee will also evaluate the final paper. The student files a final copy of the paper with the department. Note that the required paper is not necessarily a “thesis” as defined in **Faculty of Arts and Sciences** requirements (although a thesis, as formally defined, would also satisfy the MA Paper requirement).

REQUIREMENTS FOR THE PHD DEGREE

The following section details department-specific requirements for the PhD degree.

ADVISING AND SUPERVISION

A temporary faculty advisor is assigned to each incoming student. At any time after arrival, but not later than the end of the first year, each new student selects a permanent principal advisor (or advisors) with whom to work, and who agrees to serve in this capacity. Until the student selects an advisor, the Graduate Secretary and the temporary faculty advisor will provide general advice and help register the student for courses. Students are free to change their advisors at any time. Advisors consult with the students on their course selections and on their research and career plans, and monitor their advisees' progress in the graduate program. They are also responsible for formally approving their advisees' course programs term by term. Student progress is also monitored by the Committee on Graduate Studies and the Graduate Secretary. Progress of all active graduate students is systematically reviewed by the faculty in each subdiscipline annually early in the Spring Term.

Faculty advisors should notify the Committee on Graduate Studies of their advisees' successful completion of comprehensive examinations, and students should petition the Committee on Graduate Studies for formal approval of their comprehensive examination committees and thesis committees (see below). After review by the full faculty, students receive written response to their petitions from the Committee on Graduate Studies. The Graduate Secretary records progress towards advanced degrees. Students are advised to check with the Graduate Secretary periodically to ensure that their files are up to date.

COURSE CREDITS

A minimum of 72 course credits in anthropology is required for the PhD degree. Of these, at least 60 credits must be in formal courses (as opposed to readings courses, independent study, or thesis or dissertation credits). The remaining 12 credits may be any combination of formal courses, readings courses, independent study, and/or thesis and dissertation credits.

Generally, a full-time student will be enrolled in a minimum of three formal courses during Fall and Spring Terms until the required 60 credits of formal course work is attained. Reading or independent study courses, if taken prior to completion of the 60-credit minimum of formal courses, are generally taken during the Summer Term or in addition to the three formal courses that are the minimum for full-time students during the Fall or Spring Terms.

Students may petition the Committee on Graduate Studies to accept toward the 72-credit minimum (and/or the 60-credit minimum of formal courses) course credits taken outside anthropology. **FAS** regulations also apply to transfer credits.

CORE COURSES/PRELIMINARY EXAMINATIONS

The core course system of the Department of Anthropology fills the role of the preliminary examination in the **Faculty of Arts and Sciences** requirements for the PhD. Core courses are offered in the four subfields of anthropology: cultural anthropology, archeology, physical anthropology, and linguistics. PhD students are required to pass (with a grade of B- or better) at least three of these four core courses, including the core course in the student's chosen subfield of specialization. A broad foundation, based on a general familiarity with all four subfields, is considered to be highly beneficial to the practice of anthropology, but students may elect to omit one of the four core courses. Full-time students are expected to pass the required core courses by the end of their second term in residence.

A student with an MA from another institution, or with a strong undergraduate background in one or more subdisciplines, may petition the Committee on Graduate Studies to waive the core course in that/ those subdiscipline(s), supporting the petition with transcripts and other relevant documents. If not granted a waiver, after consultation with the instructor and review of the core course syllabus, a student can take the final exam (when it is normally given) instead of taking a core course for credit. A student may opt to selectively audit a core course to remedy weaknesses in only a few areas, and then take the regular final exam. It should be stressed, however, that all exams will be evaluated in the same manner as those of students taking the course for credit.

LANGUAGE REQUIREMENT

Before a student is advanced to candidacy, he or she must demonstrate competence in a language other than English that possesses a substantial body of anthropological literature. For common foreign languages (e.g., French, German, Spanish), the student may choose to pass in one of two ways:

- 1) Pass with a grade of B- or better the level IV or VIII course offered by the language department.
- 2) Pass the examination for evaluating graduate students currently offered by the language department.

In the case of languages for which such avenues of evaluation are not available, the student, after seeking advice from his/her advisor, should petition the Committee on Graduate Studies for alternative forms of evaluation.

METHOD/THEORY REQUIREMENTS

Students in archeology must pass with a grade of B- or better ANTH 2534 and ANTH 2524 (Archeological Data Analysis 1 and 2). They may petition the Committee on Graduate Studies to accept other courses in quantitative methods in lieu of these. Students in physical

anthropology or linguistics must pass with a grade of B- or better two courses in quantitative methods selected from those offered in the Department of Anthropology or elsewhere. They must petition the Committee on Graduate Studies for approval of these courses. Students in cultural anthropology must pass with a grade of B- or better ANTH 2763 (Field Methods) and ANTH 2750 (Seminar on Contemporary Theory) or a comparable seminar approved for this purpose by the Committee on Graduate Studies. They may petition the Committee on Graduate Studies for approval of other courses to satisfy this requirement.

COMPREHENSIVE EXAMINATION AND ADVISORY COMMITTEE

After completing the core course requirement and prior to advancement to PhD candidacy, students must pass two comprehensive examinations designed to test breadth and depth of knowledge in the chosen areas of expertise. The acceptable forms of the exam are described in greater detail on the departmental Web site (<http://www.pitt.edu/~pittanth>). Students generally take their comprehensive examinations at the end of their third year of residence. Each examination is designed and administered by a committee constructed by the student. The committee consists of at least three faculty members (at least two of whom must be in the department). One of these is designated as chair of the committee.

Well in advance of the exam, the student submits to the committee a bibliography of sources from which the student intends to work. Members of the committee may recommend additional sources. The student must request approval of the topic and committee for each examination from the Committee on Graduate Studies.

The structure of the comprehensive examinations differs from subfield to subfield:

■ Cultural Anthropology

One examination is in the student's ethnographic area (e.g., Africa, East Asia, Latin America, the Pacific). The student is responsible not only for the pertinent ethnography and cultural anthropology, but also for the prehistory, physical anthropology and linguistics of his/her chosen area. The second examination is of a more theoretical nature in a field chosen and defined by the student in conjunction with the student's advisor. Examples are social organization, sociocultural change, comparative religion, cross-cultural studies, economic anthropology, cultural ecology, etc. Each examination will last approximately six hours and will be administered in the department.

■ Archeology

One examination is on either a significant world area (e.g., North America, Mesoamerica, Europe) or a significant time period (e.g., the Paleolithic). The other is on the theory and history of archeology.

■ Physical Anthropology

One examination covers a major body of theory such as evolutionary theory or developmental theory, and the second focuses on a coherent, substantive body of research such as hominoid evolution, functional anatomy, or evolutionary psychology.

■ Linguistics

The first exam (taken by all students) will cover the generalities of data collection (including recording), data processing (including computers), dialect surveys, lexicography (including ethnosemantics), orthography design, linguistic theory within field linguistics, and descriptive linguistics generally. The second exam (tailored to the area

and language family specialization of each student) will deal with the linguistic data of a particular region (for example—North America, Western Europe, Mesoamerica, South Asia, South America, Southeast Asia, etc.): what are the languages, how are they related, how well known are they, what are they like, what are the relevant sociolinguistic factors? Each exam will last approximately six hours. They will be scheduled at least two days apart.

DISSERTATION COMMITTEE

As soon as possible after completion of the core course requirements, and certainly by the third year in residence, prior to admission to candidacy, the student must establish a doctoral dissertation committee. See *Doctoral Committee on page 40 under FAS Requirements for the PhD Degree for further detail on the duties and make-up of the committee.*

DISSERTATION OVERVIEW

Before actively pursuing dissertation research, the student makes an oral presentation of the intended project to his/her dissertation committee. The student gives the members of the committee a well-researched and well-written dissertation proposal at least one month ahead of time. This overview is not *pro forma* and should not be the first discussion of the project between the student and his/her committee members. If, after the overview, the committee members agree that the student should proceed with the dissertation project, they sign the Advancement to Candidacy form, which is then forwarded to the Assistant Dean of Graduate Studies.

PUBLIC PRESENTATION

Each student presents a formal colloquium to the department based on the dissertation research. This may form part of the dissertation defense, or it may come at an earlier stage so that the experience may be of benefit as the ideas in the dissertation take shape.

DISSERTATION DEFENSE AND GRADUATION

By the time of the oral defense of the dissertation, the student will have prepared and presented to his/her committee members a final version of the dissertation. It is expected that there will be sufficient interaction between the student and the committee members that alterations subsequent to the defense will be minimal and minor. All members of the doctoral dissertation committee should be present at the defense. *The procedures for the final oral examination are outlined in the Regulations Pertaining to Doctoral Degrees on page 23 of this bulletin and in the FAS Requirements for the PhD Degree on page 40.*

In addition to the final unbound University copy of the dissertation, a bound copy of the final dissertation must be filed with the department.

PART-TIME PhD STUDENTS

A part-time student in the doctoral program should take the core course in the student's chosen subfield before taking more than 18 credits of formal course work. The student should complete the core course requirement before taking more than 36 credits of formal course work and proceeding with the other aspects of the program.

GENERAL MA DEGREE FOR DOCTORAL STUDENTS

An MA degree may be awarded during the course of a student's PhD program after completion of the following requirements:

- 1) 30 course credits
- 2) The language requirement

- 3) The core course in the student's Area of Concentration
- 4) Course(s) that satisfy the MA Method/Theory Requirement (*see MA requirements above*)
- 5) An acceptable MA paper
- 6) Fulfillment of all **Faculty of Arts and Sciences** regulations published in this bulletin (for example, at least 12 credits of course work, not including readings or independent study, must be at the 2000 level).

The student selects at least three Graduate Faculty members (at least two of whom must be in the Department of Anthropology) to participate on the MA advisory and evaluation committee. The Committee on Graduate Studies should be petitioned for approval of the committee composition and the MA paper topic well in advance of the expected date of completion.

DEPARTMENT COURSE LISTINGS

ANTHROPOLOGICAL LINGUISTICS

ANTH	1440	Language and Prehistory in Mesoamerica
ANTH	1441	Field Methods in Linguistics
ANTH	1442	Mayan Languages and Cultures
ANTH	1443	American Indian Languages
ANTH	1444	Gypsy Language and Culture
ANTH	1446	Artificial Languages
ANTH	1447	Language, Culture, and Society
ANTH	1448	Aztec Language and Culture
ANTH	1449	Mesoamerican Linguistics
ANTH	1466	Topics in Anthropological Linguistics
ANTH	2440	Language and Prehistory of Mesoamerica
ANTH	2441	Field Methods in Linguistics
ANTH	2444	Gypsy Language and Culture
ANTH	2449	Mesoamerican Linguistics
ANTH	2450	The Structure of an Amerindian Language
ANTH	2460	Historical Linguistics
ANTH	2466	Topics in Anthropological Linguistics
ANTH	2490	Linguistics Core Course

ARCHEOLOGY AND PREHISTORY

ANTH	1520	Sedimentology and Stratigraphy
ANTH	1521	Geoarcheology
ANTH	1522	Europe in Later Prehistory
ANTH	1523	European Archeology: The Ice Age
ANTH	1524	Chinese Archeology
ANTH	1525	Eastern North American Archeology
ANTH	1526	Western North American Archeology
ANTH	1528	South American Archeology
ANTH	1530	Origins of Cities
ANTH	1532	Prehistoric Art and Symbol
ANTH	1534	Archeological Data Analysis 1
ANTH	1535	Basic Archeological Field Training

ANTH	1537	Basic Laboratory Analysis
ANTH	1538	Advanced Laboratory Analysis
ANTH	1539	Ancient Maya
ANTH	1540	Special Topics in Archeology
ANTH	1591	Historical Archeology
ANTH	2352	The Iroquoian Peoples: Archeology, Ethnology, History
ANTH	2512	Prehistory of a Selected Area
ANTH	2513	Selected Archeological Problem
ANTH	2515	Seminar: Andean Archeology
ANTH	2516	Chiefdoms
ANTH	2517	Archeological Method and Theory
ANTH	2522	Sedimentology and Stratigraphy
ANTH	2524	Archeological Data Analysis 2
ANTH	2525	Europe in Later Prehistory
ANTH	2526	Maritime Adaptations
ANTH	2531	Household Archeology
ANTH	2532	Archeological Applications of Geographic Information Systems
ANTH	2533	Ancient States in the New World
ANTH	2534	Archeological Data Analysis 1
ANTH	2535	The Maya: Past and Present
ANTH	2536	Eastern North American Archeology
ANTH	2537	Western North American Archeology
ANTH	2541	Regional Settlement Patterns
ANTH	2550	Ethnoarcheology
ANTH	2551	Peoples in Contact
ANTH	2588	Archeology Core Course

PHYSICAL ANTHROPOLOGY

ANTH	1600	Human Evolution and Variation
ANTH	1601	Structure and Function
ANTH	1602	Human Skeletal Analysis
ANTH	1603	Human Origins
ANTH	1604	Behavioral Ecology
ANTH	1605	Primate Anatomy
ANTH	1606	Fossil and Living Primates
ANTH	1607	Primate Behavior
ANTH	1608	Comparative Osteology and Odontology
ANTH	1611	Evolutionary Theory
ANTH	1615	Evolution of the Vertebrates
ANTH	1618	Special Topics in Sociobiology
ANTH	1619	Special Topics in Physical Anthropology
ANTH	2601	Special Problems in Biological Anthropology
ANTH	2602	Sociobiology
ANTH	2603	Laboratory Methods in Physical Anthropology
ANTH	2605	Primate Anatomy
ANTH	2606	Primate Paleontology
ANTH	2607	Experimental Morphology and Functional Anatomy

ANTH 2608 Primate Biology
 ANTH 2609 Seminar in Systematics and Evolution
 ANTH 2610 Physiological Anthropology
 ANTH 2618 Special Topics in Sociobiology
 ANTH 2630 Physical Anthropology Research
 ANTH 2687 Core Course in Physical Anthropology
 ANTH 2692 Physical Anthropology Research Seminar
 ANTH 2694 Ethology

SOCIAL AND CULTURAL ANTHROPOLOGY

ANTH 1710 Philosophy of Anthropology
 ANTH 1731 Women and Gender in the Third World
 ANTH 1732 Drugs and Society
 ANTH 1733 Drugs, Ethnicity, and Class in the U.S.
 ANTH 1738 Gender Perspectives in Anthropology
 ANTH 1739 Cultures of East Asia
 ANTH 1748 Cultures of South America
 ANTH 1751 People and Environment in Amazonia
 ANTH 1752 Anthropology of Food
 ANTH 1753 North American Indians
 ANTH 1755 Urban Anthropology
 ANTH 1756 Economic Anthropology
 ANTH 1757 Social Organization
 ANTH 1759 Chinese Society
 ANTH 1760 Anthropology of Law
 ANTH 1761 Patients and Healers: Medical Anthropology
 ANTH 1764 Cultures and Societies of India
 ANTH 1765 Tribal Societies
 ANTH 1768 Cultures and Societies of Eastern Europe
 ANTH 1769 Dynamics of Ethnicity
 ANTH 1770 Kinship and the Family
 ANTH 1771 Religion and Culture
 ANTH 1772 Anthropology of Women
 ANTH 1773 Cultures of Mesoamerica
 ANTH 1774 Perspectives on Religion
 ANTH 1776 Myth, Symbol, and Ritual
 ANTH 1777 American Culture
 ANTH 1779 Social and Cultural Change
 ANTH 1780 Introduction to Anthropology
 ANTH 1782 Social Stratification and Expressive Culture
 ANTH 1783 Japanese Culture
 ANTH 1784 Japanese Society
 ANTH 1786 Cultures of the Pacific
 ANTH 1787 Special Topics in Cultural Anthropology
 ANTH 1788 Andean Societies and Cultures
 ANTH 1791 Dialectics of Identity in Western Europe
 ANTH 2352 The Iroquoian Peoples: Archeology, Ethnology, History
 ANTH 2720 The Poetics and Politics of Ethnography
 ANTH 2721 Feminist Ethnography

ANTH 2726 Gender and Health
 ANTH 2727 Cultural Psychology
 ANTH 2728 Educational Anthropology
 ANTH 2729 Problems in North American Ethnology
 ANTH 2731 Health and Healing: Analysis and Theory
 ANTH 2732 Anthropology and Contemporary Political Issues
 ANTH 2733 Anthropology and Aesthetics
 ANTH 2734 Anthropology and Neo-Marxism
 ANTH 2735 Economic Anthropology
 ANTH 2736 Population and Culture
 ANTH 2737 Anthropology of Food
 ANTH 2740 Pacific Ethnology
 ANTH 2741 Anthropology of Law
 ANTH 2744 Grants and Research Design
 ANTH 2745 History of Anthropological Theory
 ANTH 2747 Ethnography of Melanesia
 ANTH 2750 Contemporary Anthropological Theory
 ANTH 2753 Conflict and Violence
 ANTH 2755 Cultural, Social, and Psychological Explanation
 ANTH 2756 Religion and Culture
 ANTH 2759 Urban Anthropology
 ANTH 2761 Development Education and Applied Anthropology
 ANTH 2762 Human Ecology
 ANTH 2763 Field Methods in Cultural Anthropology
 ANTH 2764 Kinship Theory
 ANTH 2765 Tribal Societies
 ANTH 2766 Anthro and Political Economy
 ANTH 2771 Gender and the State
 ANTH 2772 Communication and Culture
 ANTH 2773 Cognition and Culture
 ANTH 2774 Mathematical Anthropology
 ANTH 2775 Applied Anthropology
 ANTH 2782 Special Topics in Cultural Anthropology
 ANTH 2783 Social Stratification and Expressive Culture
 ANTH 2784 Pacific Prehistory and Ethnographic Analogy
 ANTH 2785 Ethnography of Education
 ANTH 2789 Cultural Anthropology Core Course
 ANTH 2791 Identities and Cultures in Western Europe
 ANTH 3007 Ethnographic Approaches to Program Evaluation

GENERAL

ANTH 1900 Internship in Anthropology
 ANTH 2000 Research and Thesis for the Master's Degree
 ANTH 2902 Directed Study for MA Students
 ANTH 2980 Readings in Selected Fields
 ANTH 2990 Independent Study
 ANTH 3000 Research and Dissertation for the PhD Degree

BIOETHICS

The **Faculty of Arts and Sciences**, in collaboration with the Center for Bioethics and Health Law, offers a Master of Arts in Bioethics. Designed for clinicians, lawyers, and students of the humanities and social sciences, the program emphasizes the philosophical foundation of bioethics and offers opportunities for students to observe clinical ethical reasoning in clinical practica and to pursue in-depth research. This interdisciplinary program allows students to combine study in ethical theory, philosophy and history of medicine, cultural studies, health law, public health, and the social sciences.

Joint JD/MA and MD/MA programs with the **Schools of Law and Medicine** afford students the opportunity to pursue both the MA in Bioethics and professional degrees in law or medicine in less time than would be required to pursue the degrees separately. In addition, the joint-degree programs allow students to integrate their dual interests during their professional education.

In order to complete the MA in Bioethics, students take core seminars and elective courses, participate in clinical practica, and write a master's thesis to ensure sufficient breadth and depth in the interdisciplinary field of bioethics. The program may be completed in one calendar year, though some students take an additional semester or year to pursue their thesis projects. Core seminars are small and discussion-oriented, with ample opportunity for students to refine their ideas and develop skills of argumentation. Elective courses are offered in a variety of departments, interdisciplinary programs, and schools, including anthropology, cultural studies, history and philosophy of science, law, philosophy, public health, and sociology. Students are encouraged to tailor their course of study to meet their individual needs and may petition for specific courses to serve as electives.

The clinical practica are designed to familiarize students with ethical issues as they arise in clinical settings. Clinical Practicum I is accompanied by seminars in medical sociology and case-based clinical ethics. Students are assigned to teams in UPMC-Health System hospitals and participate in work rounds, clinics, nights on call, and clinical ethics consultation and teaching. Clinical Practicum II affords students more intensive experience in a single clinical setting typically related to their thesis projects. Students with previous extensive clinical experience may petition to substitute an elective for one practicum.

Thesis projects enable students to focus their research on an area of particular interest under the guidance of a thesis advisor and committee of faculty members. Students share their ideas and learn about faculty members' research in the supportive environment of a student-faculty thesis seminar.

CONTACT INFORMATION

Main Office: 300 Medical Arts Building
 Phone: (412) 647-5700
 Fax: (412) 647-5877
 E-mail: bioethic@pitt.edu
 Web site: <http://www.pitt.edu/~bioethic/>

Co-directors: Alan Meisel and Kathleen M. DeWalt

Affiliated Faculty: ARNOLD (Medicine), BARNARD (Medicine), DeWALT (Anthropology), LEWIS (Psychiatry), MEISEL (Law), PARKER (Public Health), WICCLAIR (Medicine)

RESEARCH

Faculty affiliated with the MA in Bioethics carry out a wide variety of research on topics such as advance directives, AIDS and the quality of nursing care, the definition of death, district attorneys' attitudes toward end-of-life decision-making, ethics consultation, feminist approaches in bioethics, genetic testing, long term care, lung lobe donation and transplantation, minority members' participation in clinical research, physician-patient communication, palliative care, and required request for organ donation.

FACILITIES

The Bioethics Program draws on a number of facilities at the University of Pittsburgh. The most important is the Center for Bioethics and Health Law. Founded in 1987 as the Center for Medical Ethics, the Center for Bioethics and Health Law has become renowned for pioneering empirical research in bioethics, developing clinical ethics training programs and round-the-clock ethics consultation services, and drafting innovative bioethical policy. In addition to administering the Bioethics Program, the Center coordinates the Clinical Ethics Training Programs to train medical students and residents; a Research Ethics course for graduate students, post-doctoral fellows, residents, and faculty; and the Consortium Ethics Program to provide clinical ethics training to representatives of area hospitals. In addition to the Center, the program draws on the faculty and courses of several departments in the **Faculty of Arts and Sciences** (Anthropology, History and Philosophy of Science, Philosophy, and Sociology), the **School of Medicine**, the **Graduate School of Public Health**, and the **School of Law**. The program also has access to a range of clinical settings associated with the University of Pittsburgh Medical Center.

OTHER OPPORTUNITIES

In addition to pursuing the formal course of study, students in the Bioethics Program may participate in a variety of educational opportunities in bioethics, health law, and health policy at the University of Pittsburgh. These opportunities feature visiting scholars as well as University faculty, and allow students to engage with members of a national and international network of bioethics scholars. They include the Bioethics Colloquia, Bioethics Grand Rounds, Center for Bioethics and Health Law Journal Club, History of Medicine Lecture Series, Health Policy Institute Lecture Series, and the Literature and Medicine Discussion Group.

ADMISSIONS

Students are admitted to the program through the admissions committee for the IDMA in Bioethics. Applicants must submit the following:

- A completed application form
- Official transcripts from both undergraduate and graduate institutions attended
- A personal statement of reasons for entering the program and goals for study within it
- A writing sample
- Three letters of recommendation
- Recent GRE scores

Applicants to the joint JD/MA program may substitute LSAT scores, and applicants to the joint MD/MA program may substitute MCAT scores. International students must submit TOEFL scores. Completed applications are first considered February 1; applications are considered on a rolling basis until August 15 or until the class is filled.

Applications can be requested from, and should be returned to:
 Director of Admissions
 Center for Bioethics and Health Law
 Medical Arts Building, Suite 300
 3708 Fifth Avenue
 Pittsburgh, PA 15213-3405
 Phone: (412) 647-5700
 E-mail: bioethic@pitt.edu
 Web site: <http://www.pitt.edu/~bioethic/>

Applicants to the joint JD/MA and MD/MA programs must complete application to both the Bioethics Program and the **School of Law** or **School of Medicine**, and must observe the application deadlines for each program. Applicants interested in the joint-degree programs should request information on these degrees when seeking application materials.

FINANCIAL ASSISTANCE

A limited number of students may be funded through research assistantships at the Center for Bioethics and Health Law.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

To complete the MA, students must take a minimum of 30 credits and complete a thesis. Course requirements include nine credits of core courses, three credits of a restricted elective, six credits of clinical practica, and six to twelve credits of unrestricted electives and thesis research. The IDMA can be completed in three terms.

CORE COURSES

There are three required core courses:

Bioethics—a graduate-level introduction to classic topics, texts, and approaches in bioethics, and critical examination of the practice of bioethics itself

Philosophy of Medicine—an examination of key philosophical issues, such as causality, concepts of health and disease, production of knowledge, and paradigms of medical reasoning

Theoretical Foundations of Applied Ethics—an examination of classical ethical theories focusing on the relationship between ethical theory and ethical decision-making

RESTRICTED ELECTIVE

The restricted elective is designed to provide a particular disciplinary perspective (for example, history or law) on issues in medicine and

health care, or to focus on a particular aspect of health care (for example, research or public health). Recent offerings include Bioethics and Law, Conceptual Foundations and Ethics of Public Health, Cultural and Feminist Studies of Medicine and Technoscience, History of Medicine, and Medical Anthropology.

CLINICAL PRACTICA

The clinical practica ensure that students become knowledgeable about the clinical setting and learn to identify normative issues in clinical cases, through clinical observation (including clinical ethics consultations and teaching), seminar discussion, and preparation of case studies.

UNRESTRICTED ELECTIVES

Electives are offered in bioethics, as well as in complementary fields such as anthropology, cultural studies, history and philosophy of science, law, philosophy, public health, and sociology.

THESIS

Thesis research is conducted under the direction of program faculty to ensure that students develop both research skills and in-depth understanding of a topic in bioethics.

PROGRAM COURSES

CORE COURSES

BIOETH	2658	Philosophy of Medicine
BIOETH	2661	Theoretical Foundations of Applied Ethics
BIOETH	2664	Bioethics

RESTRICTED ELECTIVES (RECENT OFFERINGS)

Bioethics and Law
 Cultural and Feminist Studies of Medicine and Technoscience
 History of Medicine
 Medical Anthropology
 Research Ethics

UNRESTRICTED ELECTIVES (RECENT OFFERINGS)

Dimensions of Aging: Culture and Health
 Elderly and the Law
 Environmental and Occupational Health Law
 Ethics and the Public Life
 Feminist Approaches in Bioethics
 Feminist Theory
 Gender, Race, and Public Policy
 Genetics, Ethics, and the Law
 Historical and Sociological Perspectives in Public Health
 History of Ethics
 Philosophical and Ethical Issues in Human Genetics
 Science and Its Rhetoric

BIOLOGICAL SCIENCES

There are three programs of graduate study in the Department of Biological Sciences: Structural Biophysics (SB); Ecology and Evolution (E&E); and Molecular, Cellular, and Developmental Biology

(MCDB). The department offers a Master of Science degree in Biological Science through the E&E program, and a PhD degree in Biological Science in all three programs. Although these programs represent different areas of study in the biological sciences, they operate with common mechanisms for admission, advice and guidance, first-year courses, teaching requirements, and dissertation research. These common aspects are described briefly below. For more detailed information, students are encouraged to read the department's publications, *Graduate Program in the Biological Sciences* and *Handbook for Graduate Study*, which can be obtained by writing to the Director of Graduate Admissions; Department of Biological Sciences; University of Pittsburgh; Pittsburgh, PA 15260.

CONTACT INFORMATION

Department Chair: James M. Pipas
 Main Office: A234 Langley Hall
 Phone: (412) 624-4350
 Fax: (412) 624-4759
 Web site: <http://www.pitt.edu/~biohome/main.html>

RESEARCH

Research in the department covers a broad range, from systematics and plant ecology to X-ray crystallography and gene expression. Within that range, interests and expertise are concentrated in a number of areas of strength that provide corresponding communities of common interests within the department. These include cell and developmental biology, biochemistry, structural biology, computational biology, molecular biology, genetics, evolution, microbiology, and neurobiology. The complete list of activities is too extensive to reproduce here; those interested in graduate study in the department should request the publication, *Graduate Study in the Biological Sciences*, in which are summarized the research programs of the faculty members. The department's research activities are strongly supported (about \$5.5 million annually) by various national funding agencies, particularly NIH and NSF, and a variety of private agencies such as the Howard Hughes Medical Institute, the March of Dimes Foundation, the American Cancer Society, and the American Heart Association.

FACILITIES

The department is located in three internally connected modern structures: Clapp, Crawford, and Langley Halls. Within the complex there are fully-equipped research laboratories, teaching laboratories, a 30,000-volume library devoted to the biological sciences, faculty and graduate student offices, and research support services (greenhouses, a machine shop, photographic suites, media preparation kitchens, controlled environment units, animal and bird housing, etc.). Provisions have been made for the large-scale culture of viruses, bacteria, fungi, and animal cells under appropriate containment conditions. Special services available within the department include an in-house DNA synthesis facility, complete X-ray crystallography facilities, a microscopy suite with scanning electron microscope, transmission electron microscopes, confocal microscope and associated sample preparation facilities, and a transgenic mouse facility. Nuclear magnetic resonance, peptide synthesis, and hybridoma facilities, as well as the Carnegie Museum of Natural History, are available in the immediate vicinity. Elsewhere on campus there is an excellent general library, Hillman Library, other specialized libraries, and a comprehensive computer center. The University of Pittsburgh is a partner in the Pittsburgh Supercomputing Center.

The Pymatuning Laboratory of Ecology is a field station dedicated to environmental education and ecological research. In PLE courses, direct observation and hands-on experience with living organisms under field conditions are combined with modern laboratory and computer techniques in the discovery of structure and function in ecological systems.

Pymatuning Laboratory is located on the shores of the Pymatuning Reservoir in northwestern Pennsylvania. The laboratory site overlooks the Sanctuary Lake portion of the reservoir, part of an 11,000 acre tract of water, wetlands, and forest managed as a wildlife refuge and propagation area by the Pennsylvania Game Commission. The remainder of the 14,000-acre reservoir lies within Pymatuning State Park.

INTERDEPARTMENTAL PROGRAMS

The Department of Biological Sciences is involved in several interdisciplinary programs with other schools of the University and with other institutions. Students interested in these programs should request complete information from the department.

STRUCTURAL BIOPHYSICS

Graduate study in structural biophysics and computational biology is offered jointly with the Departments of Chemistry, Physics and Astronomy, and Computer Science. There are extensive research collaborations among members of these departments.

MD/PhD PROGRAM

Through the MD/PhD Program of the University of Pittsburgh and Carnegie Mellon University, exceptional students wishing to specialize in medical research may combine the curriculum at the University of Pittsburgh **School of Medicine** with the graduate curriculum at the Department of Biological Sciences. Prospective students must apply to the University of Pittsburgh **School of Medicine** and to the MD/PhD Program. See *Degree Options in the School of Medicine's listing on page 396 in the First-Professional Schools section of this bulletin.*

ADMISSIONS

All students should comply with the general regulations for admission as noted under Admissions on page 34 at the start of the Faculty of Arts and Sciences section of this bulletin. The minimum requirements for admission to graduate study in the Department of Biological Sciences for all three graduate programs (Molecular, Cellular, and Developmental Biology [MCDB]; Structural Biophysics [SB]; and Ecology and Evolution [E&E]) are described here. Additional requirements may apply for any specific program; for example, identification of a research advisor is generally necessary for admission into the E&E program. The general admissions requirements for all three programs are the following:

- A baccalaureate degree in chemistry, mathematics, physics, or any of the biological sciences, for example, biology, botany, zoology, biochemistry, biophysics, microbiology, cell or developmental biology.
- An overall and science undergraduate performance of B or better (quality point average of at least 3.00). Exceptions to these criteria require special justification at both department and graduate school levels.

- At least two courses completed in each of the following study areas: biology, general chemistry, organic chemistry, physics, mathematics through calculus, plus appropriate advanced courses completed in the area of interest.
- Placement at or above the 60th percentile in both the aptitude and advanced sections of the Graduate Record Examination. The advanced test may be taken in biochemistry and molecular biology, biology, chemistry, or physics. For applicants whose native language is not English, proficiency in English must be demonstrated by a score of 550 or better on the TOEFL examination.
- Submission of three or more letters of reference from undergraduate faculty or laboratory supervisors who are in a position to accurately assess the applicant's qualifications for graduate training.
- Submission of a statement from the applicant describing any special training, career goals, and personal motivation for attending the graduate program.
- Qualified applicants who are interested in the biological sciences even though former study has not been in this field will be encouraged to obtain the necessary background while enrolled on a provisional basis. If there are specific deficiencies in the undergraduate background, these will be defined at the time of admission and must be overcome before full graduate status can be awarded.

FINANCIAL ASSISTANCE

Graduate students in the department are eligible for financial assistance, either as Teaching Assistants or as Graduate Student Researchers. Qualified students are encouraged to apply for an Andrew Mellon Predoctoral Fellowship (*see Fellowships and Traineeships on page 7 for details on the fellowship*) and for national fellowships awarded by various agencies and foundations.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with department-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

Admission for study toward a Master of Science in Biological Sciences is offered in the Ecology and Evolution program. This course of study, which requires approximately two years, provides students with an educational opportunity beyond the bachelor's degree that stresses methods of research, independent thought, and written communication of scientific results. It is an endeavor with different objectives from those of the doctoral program, and master's students are regarded as a group with legitimate aspirations and particular needs. The requirements include 12 credits of course work—10 of which must be taken for a letter grade from among the approved offerings of the department—and 18 credits of research. All candidates take a comprehensive examination within their first year and prepare and defend a thesis. Similar standards are expected of master's theses and PhD dissertations, with differences primarily involving the duration of time involved in the project and the scope of coverage.

REQUIREMENTS FOR THE PhD DEGREE

A PhD in Biological Sciences is offered in all three programs and normally involves four or more years of study. The three programs of graduate training have similar structures for the first-year curriculum and somewhat different structures for subsequent years. Each of the three programs offers a modular core course as a requirement for all first-year students (courses include Current Topics in Structural Biophysics; Current Topics in Ecology and Evolution; and Current Topics in Molecular, Cellular, and Developmental Biology).

Students in all three programs also take graduate seminar courses. Students in the SB and MCDB programs perform research rotations in the first year. Generally, students choose a thesis advisor by the end of the second term. Students in the E&E program usually identify a research advisor prior to entry. There is no requirement in the E&E program for research rotations, although students may elect to carry out rotations.

Advancement to the second year of study requires successful completion of all courses (with an overall average of B or better) and an appropriate intellectual attitude. Students are expected to establish their dissertation research topic during the second year. Admission to candidacy for the PhD degree is based upon a demonstration of desire and competence in research during the second year and satisfactory completion of a comprehensive examination given at the end of the second year. Before admission to candidacy, there must be a meeting of the student with the proposed doctoral committee. With the advice of their research supervisors, students select courses appropriate to their research endeavors during the second and subsequent years. The PhD is awarded following successful defense of the thesis with a public seminar and satisfaction of all other University, department, and program requirements. *For further details, see Regulations Pertaining to Doctoral Study on page 23 and Requirements for the PhD Degree in the FAS section of the bulletin on page 40.*

COURSE LISTING

Graduate students from other departments requiring a general survey of biochemistry are advised to register for BIOSC 1000 or 1810 and 1820.

SELECTED UPPER-DIVISION UNDERGRADUATE COURSES

BIOSC	1000	Introductory Biochemistry
BIOSC	1130	Evolution
BIOSC	1200	Vertebrate Morphology
BIOSC	1210	Vertebrate Morphology Laboratory
BIOSC	1280	Microbial Genetic Engineering
BIOSC	1290	Experimental Genetic Engineering
BIOSC	1320	Population Biology
BIOSC	1350	Plant Biology
BIOSC	1380	Global Ecology
BIOSC	1470	Biophysical Chemistry
BIOSC	1500	Cell Biology
BIOSC	1510	Cell Biology Laboratory
BIOSC	1520	Developmental Biology
BIOSC	1530	Developmental Biology Laboratory
BIOSC	1730	Virology
BIOSC	1740	Virology Laboratory

BIOSC	1750	Immunology Laboratory
BIOSC	1760	Immunology
BIOSC	1810	Macromolecular Structure and Function
BIOSC	1820	Metabolic Pathways
BIOSC	1830	Biochemistry Laboratory
BIOSC	1850	Microbiology
BIOSC	1860	Microbiology Laboratory
BIOSC	1870	Animal Physiology
BIOSC	1880	Animal Physiology Laboratory
BIOSC	1890	Advanced Topics in Microbiology
BIOSC	1940	Molecular Biology
BIOSC	1950	Molecular Genetics Laboratory

GRADUATE COURSES

BIOSC	2000	Research and Thesis for the Master's Degree
BIOSC	2010	Current Topics in Molecular, Cell, and Developmental Biology A
BIOSC	2011	Current Topics in Molecular, Cell, and Developmental Biology 1
BIOSC	2012	Current Topics in Molecular, Cell, and Developmental Biology 2
BIOSC	2013	Current topics in Molecular, Cell, and Developmental Biology 3
BIOSC	2020	Current Topics in Molecular, Cell, and Developmental Biology B
BIOSC	2021	Current Topics in Molecular, Cell, and Developmental Biology 4
BIOSC	2022	Current Topics in Molecular, Cell, and Developmental Biology 5
BIOSC	2023	Current Topics in Molecular, Cell, and Developmental Biology 6
BIOSC	2030	Retrovirology
BIOSC	2040	Seminar in Molecular, Cell, and Developmental Biology
BIOSC	2050	Student Research Seminar
BIOSC	2070	Immunology
BIOSC	2100	Advanced Topics in Cell Biology
BIOSC	2110	Advanced Topics in Developmental Biology
BIOSC	2120	Advanced Topics in Biochemistry and Molecular Biology
BIOSC	2130	Advanced Topics in Genetics
BIOSC	2200	Advanced Topics in Structural Biophysics
BIOSC	2210	Biophysics Seminar
BIOSC	2240	Topics in Physical Biochemistry
BIOSC	2260	Molecular Biology and Regulation
BIOSC	2280	Molecular Biology Workshop
BIOSC	2281	Crystallography and X-ray Diffraction
BIOSC	2282	Crystallography and Diffraction Physics
BIOSC	2283	Crystal Structure Determination
BIOSC	2284	Protein Crystallography
BIOSC	2320	Population Biology
BIOSC	2330	Ethology

BIOSC	2350	Evolution
BIOSC	2360	Microbial Ecology
BIOSC	2400	Developmental Biology Seminar
BIOSC	2450	Biological Sciences Seminar
BIOSC	2500	Current Topics in Ecology
BIOSC	2510	Current Topics in Evolution
BIOSC	2520	Special Topics in Ecology
BIOSC	2530	Special Topics in Evolution
BIOSC	2540	Seminar in Ecology
BIOSC	2560	Seminar in Systematics and Evolution
BIOSC	2580	Computer Proficiency for Biologists
BIOSC	2770	Developmental Mechanism Seminar
BIOSC	2780	Genetics Seminar
BIOSC	2960	Departmental Seminar
BIOSC	2970	Teaching of Biological Sciences
BIOSC	2990	Independent Study
BIOSC	3000	Research and Dissertation for the PhD Degree
BIOSC	3400	Advanced Topics in Biological Sciences 1
BIOSC	3410	Advanced Topics in Biological Sciences 2
BIOSC	3420	Advanced Topics in Biological Sciences 3
BIOSC	3902	Directed Study

COURSES AT PYMATUNING LABORATORY

Graduate work in ecology is offered at the Pymatuning Laboratory of Ecology. A special brochure describing programs offered at this station is available upon request from the department.

BIOSC	1040	Ecological Management
BIOSC	1140	Behavioral Ecology
BIOSC	1160	Forest Ecology
BIOSC	1170	Limnology
BIOSC	1180	Ecology of Amphibians and Reptiles
BIOSC	1190	Aquatic Entomology
BIOSC	1220	Ecological Field Studies
BIOSC	1230	Ornithology
BIOSC	1260	Aquatic Botany
BIOSC	1270	Ecology of Fish
BIOSC	1300	Vertebrate Community Ecology
BIOSC	1330	Field Botany
BIOSC	1360	Microbial Ecology: Fungi
BIOSC	1390	Ecology of Invertebrates
BIOSC	1410	Vertebrate Ecology
BIOSC	1600	Stream Ecology
BIOSC	2380	Ecological Genetics
BIOSC	2390	Field Entomology
BIOSC	2550	Experimental Designs in Ecology
BIOSC	2570	Environmental Science Teacher's Workshop
BIOSC	2590	Graduate Topics in Stream Ecology

CHEMISTRY

The department provides programs of graduate study leading to the MS and PhD degrees in Chemistry in the fields of analytical, biological, inorganic, organic, and physical chemistry. Interdisciplinary research is also currently conducted in the areas of surface science, combinatorial chemistry, natural products synthesis, nanotechnology, biosensors, laser spectroscopy, organometallic chemistry, and theoretical chemistry.

CONTACT INFORMATION

Department Chair: Craig S. Wilcox
 Main Office: 234 Chevron Science Center
 Phone: (412) 624-8270
 Fax: (412) 624-8611
 E-mail: nagy@chemlan.chem.pitt.edu
 Web site: <http://www.chem.pitt.edu>

RESEARCH

Descriptions of research offered in each of the fields within the Department of Chemistry are given below:

ANALYTICAL CHEMISTRY

Representative of current research activities in analytical chemistry are techniques in electroanalytical chemistry, photoelectrochemistry, *in vivo* electrochemistry, capillary electrophoresis, chemical state imaging, UV resonance Raman spectroscopy, and polymer analysis.

BIOLOGICAL CHEMISTRY

Biological chemistry research includes protein control of DNA, neurochemistry of dopamine and peptides, biomacromolecular structure and function, cellular differentiation, and electron transfer mechanisms.

INORGANIC CHEMISTRY

In inorganic chemistry, studies are being conducted on organotransition metal complexes, redox reactions, complexes of biological interest, transition metal polymers, and optoelectronic materials. The program emphasis both synthesis and physical methods.

ORGANIC CHEMISTRY

Research in organic chemistry is extensive and includes the areas of reaction mechanisms, ion transport, total synthesis, molecular recognition, natural products synthesis, combinatorial chemistry, bioorganic chemistry, synthetic methodology, organometallics, enzyme mechanisms, high throughput synthesis and screening, and physical-organic chemistry.

PHYSICAL CHEMISTRY

Research areas in physical chemistry include Raman, electronic, infrared, and magnetic resonance spectroscopy; photoelectron spectroscopy; electron transmission spectroscopy; liquid state dynamics; chemistry of upper atmosphere processes; and molecular beam studies. There is also extensive research on electronic structure, reaction mechanisms, electron transfer theory, quantum mechanics, surface science and new material design. Research on computer applications to chemistry is under way in a variety of areas.

FACILITIES

The Department of Chemistry is housed in a modern chemistry complex. The main 15-story laboratory tower contains separate NMR, mass spectroscopy, and X-ray crystallography facilities; in-house machine, electronics, and glassblowing shops; and a vast array of modern research instruments. In addition to instrumentation within individual research groups, the department supports shared instrumentation, including three 300 MHz NMRs; one 500 MHz NMR; one 600 MHz NMR; two high-resolution and two low-resolution mass spectrometers; a light-scattering instrument; a circular dichroism spectrophotometer; a spectropolarimeter; X-ray systems—single crystal, powder, and fluorescence; a scanning electron microscope; an atomic force microscope; a vibrating sample magnetometer; several FT-IR and UV-VIS spectrophotometers; and workstation computer clusters.

The Chemistry Library is a 6,000 square foot facility that contains more than 30,000 monographs and 15,000 bound periodicals and more than 250 maintained journal subscriptions. Three other chemistry libraries are nearby.

CHEMICAL PHYSICS PROGRAM

Chemical physics is an exciting, interdisciplinary field in which the principles of physics are applied to chemical phenomena. The Departments of Chemistry and Physics and Astronomy cooperate to offer an Area of Concentration in Chemical Physics. Students pursue the program through one of the two departments and obtain their PhD in their home department. Students are required to take seven core courses in chemistry and physics. Through the extensive course work training, through the seminars and conferences sponsored by the program, and through the preparation of a dissertation supervised by an interdepartmental committee, students receive rigorous training that prepares them for relevant positions in academia or in industry. Further information can be obtained by contacting the Department of Chemistry.

ADMISSIONS

A background of a bachelor's degree in chemistry, including courses in mathematics through integral calculus, is preferred. In addition, the student must meet the general **Faculty of Arts and Sciences** requirements for admission to graduate study. *See Admissions on page 34 for detail on FAS requirements.*

Domestic applicants must submit Graduate Record Examination (GRE) scores and Advanced Chemistry Test scores. International applicants must also submit TOEFL scores.

INFORMATION FOR NEWLY ADMITTED STUDENTS

After taking an appraisal exam in each of the four areas of chemistry, each new student meets with the department's Graduate Student Advisement Committee for registration counseling. This meeting is to help with the student's orientation and to plan a first-year program. Similar meetings are held before each registration until the student passes the preliminary examination. At that time the staff member who supervises the student's research becomes his/her major advisor, and the remainder of the student's program is developed in consultation with the advisor. All of the advanced degree programs involve original research and course work. Other requirements include a comprehensive examination, a thesis, a seminar, and for the PhD candidate, a proposal. For the typical PhD candidate, this process takes four to five years.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with department-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

Ordinarily the MS program includes a total of four to six terms of full-time graduate work. Special arrangements are available for individuals who are interested in a part-time master's program. Each MS student must take a minimum of 12 credits of 2000- or 3000-level chemistry courses for credit. Six of these credits must be core courses (*see Course Listing below*); the remaining courses can either be in the student's major area or in other fields. Students electing to present a non-research thesis must take one laboratory course (CHEM 1250, 1380, 1440, 2610, or 3210) for credit in addition to the preceding requirements. In addition, each student who does not elect a core course in physical chemistry must demonstrate a satisfactory level of accomplishment in the appraisal examination in physical chemistry or must remove a deficiency in this area by completing CHEM 1410 and 1420 with at least a C average.

COMPREHENSIVE EXAMINATION

The comprehensive examination consists of an examination of the student's record in the six required core course credits and three additional 2000- or 3000-level credits.

THESIS

The thesis for the MS degree must represent an original research project or a comprehensive and detailed survey of some topic of current interest in chemistry. It must be defended in an oral examination.

REQUIREMENTS FOR THE PHD DEGREE

PhD candidates are required to take 12 credits of core courses (*see Course Listing below for list of core courses*). Additional courses in accord with the need of the individual student will usually be prescribed. Each candidate is required to participate in some teaching activities, for at least two terms, during his/her doctoral program.

Additional requirements for the PhD in Chemistry are detailed below. (*Students should also consult the Requirements for the PhD Degree on page 40 of the FAS section of this bulletin and Regulations Pertaining to Doctoral Degrees on page 23.*)

PHD DEGREE PRELIMINARY EVALUATION

The preliminary evaluation consists of an examination of the student's core course record. The student must achieve a quality point average of at least 3.00 in 12 credits of core courses selected from at least three of five branches of chemistry.

COMPREHENSIVE EXAMINATION

The oral comprehensive examination is devoted to a discussion of the candidate's research field. The student is asked to report on his/her own work to date and on a future research plan; but beyond that, the student must be prepared to answer questions touching on the theoretical and practical aspects of the general field in which the research problem lies. The student is also expected to show a command of graduate course work related to the field of the student's research.

The department's comprehensive examination satisfies the Faculty of Arts and Sciences requirements for an overview examination. With approval by the Department Chair and the Assistant Dean of Graduate Studies, the student is formally admitted to candidacy for the PhD program.

SEMINAR

Each student in the doctoral program is required to present at least one seminar, which is open to the department. The seminar may be given at any time during the student's career and on any topic approved by his/her major advisor, including the results of doctoral research.

PROPOSAL

After passage of the comprehensive examination, the student is expected to pursue the thesis problem. When substantial progress on this problem has been made, the student must present an original research proposal before a faculty committee. This proposal must not be closely related to the student's thesis problem.

DISSERTATION AND FINAL EXAMINATION

The PhD dissertation is a report on an investigation under the supervision of a member of the faculty. It must represent an original contribution to knowledge and must relate what is found to what was known before. Candidates must defend their thesis in an oral examination before a doctoral committee consisting of the major advisor, at least two additional departmental Graduate Faculty members, and one Graduate Faculty member from another department within the University. With prior approval, a qualified faculty member from another institution may also be appointed. The final examination is open to all members of the Graduate Faculty.

COURSE LISTINGS

ADVANCED UNDERGRADUATE/GRADUATE

CHEM	1130/2180	Inorganic Chemistry
CHEM	1210/3210	Digital Electronics (lecture and lab)
CHEM	1220/3220	Computer Interfacing (lecture and lab)
CHEM	1230/3230	Chemometrics
CHEM	1260/2260	Intermediate Analytical Chemistry
CHEM	1310/2370	Synthetic Organic Chemistry
CHEM	1380/2380	Techniques of Organic Research
CHEM	1450/3450	Molecular Modeling and Computer Graphics
CHEM	1460/3460	Numerical Methods in Chemistry
CHEM	1490/3490	Introduction to Chemical Kinetics
CHEM	1530/2530	Introduction to Molecular Spectroscopy
CHEM	1540/2540	Introduction to Mass Spectrometry
CHEM	1550/2550	Introduction to Magnetic Resonance
CHEM	1560/2560	Mass Spectrometry of Organics
CHEM	1600	Synthesis and Characterization of Polymers
CHEM	2600	Synthesis and Characterization of Polymers
CHEM	2610	Synthesis and Characterization of Polymers (lab)

CORE COURSES

CHEM	2110	Advanced Inorganic Chemistry 1
CHEM	2120	Advanced Inorganic Chemistry 2
CHEM	2210	Electroanalytical Chemistry

CHEM	2220	Chemical Separations
CHEM	2230	Analytical Spectroscopy
CHEM	2310	Advanced Organic Chemistry 1
CHEM	2320	Advanced Organic Chemistry 2
CHEM	2410	Thermodynamics and Statistical Mechanics
CHEM	2420	Quantum Mechanics and Kinetics
CHEM	2820	Biorganic Chemistry
CHEM	3590	Bio-macromolecular Structure, Thermodynamics, and Kinetics

GENERAL COURSES

CHEM	2000	Research and Thesis for the Master's Degree
CHEM	2700	Graduate Research Seminar
CHEM	2970	Teaching of Chemistry
CHEM	2990	Independent Study
CHEM	3000	Research and Dissertation for the PhD Degree
CHEM	3902	Directed Study

ANALYTICAL

CHEM	2210	Electroanalytical Chemistry
CHEM	2220	Chemical Separations
CHEM	2230	Analytical Spectroscopy
CHEM	2290	Seminar in Analytical Chemistry
CHEM	3200, 3240	Advanced Topics in Analytical Chemistry
CHEM	3230	Chemometrics

BIOLOGICAL

CHEM	2820	Bioorganic Chemistry
CHEM	3590	Bio-macromolecular Structure, Thermodynamics, and Kinetics

INORGANIC

CHEM	2110	Advanced Inorganic Chemistry 1
CHEM	2120	Advanced Inorganic Chemistry 2
CHEM	2190	Seminar in Inorganic Chemistry
CHEM	3100	Advanced Topics in Inorganic Chemistry
CHEM	3110	Advanced Topics in Inorganic Chemistry
CHEM	3120	Advanced Topics in Inorganic Chemistry

ORGANIC

CHEM	2310	Advanced Organic Chemistry 1
CHEM	2320	Advanced Organic Chemistry 2
CHEM	2390	Seminar in Organic Chemistry
CHEM	3300	Advanced Topics in Organic Chemistry
CHEM	3310	Advanced Topics in Organic Chemistry
CHEM	3320	Advanced Topics in Organic Chemistry
CHEM	3330	Advanced Topics in Organic Chemistry

PHYSICAL

CHEM	2410	Thermodynamics and Statistical Mechanics
CHEM	2420	Quantum Mechanics and Kinetics
CHEM	2490	Seminar in Physical Chemistry
CHEM	2530	Molecular Spectroscopy
CHEM	2550	Magnetic Resonance Spectroscopy

CHEM	2620	Atoms, Molecules and Materials
CHEM	3400, 3410	Advanced Topics in Physical Chemistry
CHEM	3420	Advanced Topics in Physical Chemistry
CHEM	3430	Advanced Quantum Chemistry
CHEM	3440	Time-dependent Quantum Dynamics
CHEM	3470	Statistical Mechanics
CHEM	3480	Kinetics and Motion in Chemical Reactions
CHEM	3490	Molecular Collision Dynamics
CHEM	3500, 3510	Advanced Topics in Physical Chemistry
CHEM	3520	Advanced Topics in Physical Chemistry
CHEM	3530	Advanced Topics in Reaction Dynamics
CHEM	3580	Advanced Topics in Material Science

CLASSICS**CONTACT INFORMATION**

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RESEARCH

The current research interests of the departmental faculty, while wide-ranging, concentrate on the major classical authors, with a particular focus on Homer, Pindar, Aeschylus, Thucydides, Plato, Aristotle, Lucretius, Vergil, and Propertius. Among other, more specialized areas of research are Indo-European poetics, the administrative structure of Greek cities, and the relationship of Greek tragedy and Japanese Noh. Authors covered in recent dissertations are Homer, Parmenides, Aristophanes, Plato, Aristotle, Vergil, and Horace.

FACILITIES

The department quarters on the 15th floor of the Cathedral of Learning comprise faculty and graduate student offices, a graduate seminar room, and departmental library. Most of the research tools (secondary literature, periodicals, etc.) that graduate students will be using are housed in Hillman Library, but the departmental library, adjoining the graduate seminar room, contains about 2,000 volumes, including Greek and Latin texts and standard commentaries, basic reference works, and CD-ROM materials, such as *Thesaurus Linguae Graecae* and *L'Année Philologique*.

PROGRAM IN CLASSICS, PHILOSOPHY, AND ANCIENT SCIENCE

In addition to the MA and PhD programs in Classics, the Department of Classics cooperates with the Departments of Philosophy and History and Philosophy of Science in offering a graduate program in Classics, Philosophy, and Ancient Science. Students pursue the program through one of the three departments and obtain their PhD in their home department, spending one year longer on the degree than those in the three regular PhD programs. Students in the program work closely with one another and with the cooperating faculty, who are drawn from all three departments. The program offers specialized, interdisciplinary training in the methods and skills appropriate to the

study of philosophy and science of Greek and Roman culture up to the Middle Ages.

In addition to specialized work in ancient philosophy or science, students who pursue the program through the Department of Philosophy or the Department of History and Philosophy of Science receive intensive training in the Greek and Latin languages and learn the skills of classical scholarship through courses in classical literature and history. Students who pursue the program through the Department of Classics concentrate on one of the other two departments, in addition to their own, and are trained in the later history and systematic techniques of that discipline. Through the seminars, colloquies, and conferences sponsored by the program, and through writing a dissertation supervised by an interdepartmental committee, students receive rigorous training that prepares them for teaching positions and research in college or university departments of classics, philosophy, history, or history and philosophy of science. Further information about this program can be obtained by writing to the Director, Program in Classics, Philosophy, and Ancient Science; 1518 Cathedral of Learning; University of Pittsburgh; Pittsburgh, PA 15260; or upon application to one of the three departments.

ADMISSIONS

The Department of Classics is concerned with the interpretation of the culture and society of Greco-Roman antiquity with a focus on the central literary, philosophical and historiographical texts. The research and graduate-level interests of faculty include the Greek and Latin languages and literatures, comparative literature and theater, philosophy and science, history, linguistics, and rhetoric. Prospective graduate students with interest in any of these fields are invited to consider submitting an application to the program.

Students seeking admission must first meet the requirements of **FAS** Graduate Studies (see *Admissions on page 34 of the FAS section of this bulletin for details*). Their undergraduate preparation should include training in both Latin and Greek, and they should have a general familiarity with the wider experience of Greco-Roman antiquity, especially its literature and history. The Graduate Record Examination is recommended for all applicants and is required for those applying for financial aid.

Upon acceptance of admission, each graduate student should obtain from the departmental office a copy of the *Graduate Program in Classics*.

FINANCIAL ASSISTANCE

The department attempts to provide financial assistance to students whose performance is at a consistently high level for the five-to-six years that they are in residence as students. Examples of such assistance include the following fellowships: Andrew Mellon Predoctoral, Provost's Humanities, Robert S. Marshall, Lillian B. Lawler, Provost's Development, and K. Leroy Irvis. A limited number of teaching positions are available during the Summer Sessions. *The sources of such assistance are listed below, with further detail on each source provided in the FAS section of this bulletin under Teaching and Research Appointments on page 35 or Fellowships and Traineeships on page 36.*

DEGREE REQUIREMENTS

The minimal requirements for the degrees established by the Graduate Faculty of the University and by FAS Graduate Studies and described,

respectively, under General Academic Regulations beginning on page 17 and under FAS Degree Requirements on page 39, should be read in conjunction with the specific departmental requirements for these degrees in the following sections.

REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

The Master of Arts in Classics program is primarily designed as an intermediate experience in the student's preparation for the PhD degree. It may also be regarded as a goal in itself by those who do not wish to pursue the PhD degree. The course requirements are a minimum of eight one-term graduate credit courses (24 credits). At least four of these courses must be in the 2000 series, including at least one graduate reading course and two seminars. It should be noted, however, that award of the degree is not dependent on the completion of a set number of courses, but on the achievement of an acceptable level of competence. The foreign language requirement must be met in German. Candidates may elect to write an MA thesis, but it is not required; they must take a comprehensive written examination in three fields chosen in consultation with the department.

REQUIREMENTS FOR THE PHD DEGREE

The Doctor of Philosophy in Classics program is primarily designed to train professional scholars and teachers of the classics. Full-time students with a good background in Greek, Latin, and classical studies may complete the program in three years beyond the MA degree but they should recognize that more time may be needed. The requirements for the PhD degree are at least 72 graduate-level credits, 24 of which may also be counted for the MA. At least 12 courses numbered in the 2000 series, covering various specified authors and fields, must be included. All students are required to take part in the department's undergraduate teaching program as preparation for their duties as teachers of Greek, Latin, and classical civilization.

The preliminary written examination is identical with the comprehensive written examination for the MA degree in Classics. The PhD foreign language requirement in German and either French or Italian must be met as soon as possible. In preparation for the comprehensive written examination for the PhD degree, candidates are furnished with reading lists appropriate to their chosen authors and fields. The examination is in four parts:

- (1) Special author in Greek
- (2) Special author in Latin
- (3) Special genre (in both Greek and Latin)
- (4) Special field

Upon successful completion of the comprehensive examination and all other requirements, the student, in consultation with a dissertation advisor, presents a dissertation prospectus to a faculty committee and, upon approval of the prospectus, is advanced to candidacy. When the dissertation is finished, a final oral defense completes the doctoral requirements.

COURSE LISTINGS

The following undergraduate courses (1000 series) may be taken for graduate credit. Courses in Greek and Latin may be repeated with the permission of the department when the author and/or work covered changes.

GREEK	1300	Greek Authors 1	CLASS	2972	Teaching of Classical Civilization
GREEK	1302	Greek Authors 2	CLASS	2990	Independent Study
GREEK	1400	Greek Reading: Epic	CLASS	3000	Research and Dissertation for the PhD Degree
GREEK	1402	Greek Reading: Tragedy	CLASS	3902	Directed Study for PhD Students
GREEK	1404	Greek Reading: Comedy			
GREEK	1406	Greek Reading: Lyric	GREEK	2100	Greek Reading: Epic
GREEK	1416	Greek Reading: Historians	GREEK	2102	Greek Reading: Tragedy
GREEK	1418	Greek Reading: Orators	GREEK	2104	Greek Reading: Comedy
GREEK	1420	Greek Reading: Philosophers	GREEK	2106	Greek Reading: Lyric
GREEK	1530	Hellenistic Literature	GREEK	2116	Greek Reading: Historians
GREEK	1700	Greek Prose Composition	GREEK	2118	Greek Reading: Orators
			GREEK	2120	Greek Reading: Philosophers
LATIN	1030	Medieval Latin	GREEK	2140	Greek Reading: Poetics
LATIN	1300	Latin Authors 1	GREEK	2190	Topics in Greek
LATIN	1302	Latin Authors 2	GREEK	2200	Greek Seminar: Epic
LATIN	1400	Latin Reading: Epic	GREEK	2202	Greek Seminar: Tragedy
LATIN	1402	Latin Reading: Drama	GREEK	2204	Greek Seminar: Comedy
LATIN	1406	Latin Reading: Lyric	GREEK	2206	Greek Seminar: Lyric
LATIN	1410	Latin Reading: Satire	GREEK	2208	Greek Seminar: Pastoral
LATIN	1412	Latin Reading: Elegy	GREEK	2216	Greek Seminar: Historians
LATIN	1416	Latin Reading: Historians	GREEK	2218	Greek Seminar: Orators
LATIN	1418	Latin Reading: Orators	GREEK	2220	Greek Seminar: Philosophers
LATIN	1420	Latin Reading: Philosophers	GREEK	2230	Greek Seminar: Special Topics
LATIN	1422	Latin Reading: Epistolography	GREEK	2990	Independent Study
LATIN	1700	Latin Prose Composition	GREEK	2992	PhD Reading Examination
CLASS	1210	Greek History	LATIN	2100	Latin Reading: Epic
CLASS	1220	Roman History	LATIN	2102	Latin Reading: Drama
CLASS	1312	Plato	LATIN	2106	Latin Reading: Lyric
CLASS	1314	Aristotle	LATIN	2110	Latin Reading: Satire
CLASS	1510	Greek Art	LATIN	2112	Latin Reading: Elegy
CLASS	1520	Roman Art	LATIN	2116	Latin Reading: Historians
CLASS	1710	Sanskrit 1	LATIN	2118	Latin Reading: Orators
CLASS	1720	Sanskrit 2	LATIN	2120	Latin Reading: Philosophers
CLASS	1730	Sanskrit 3	LATIN	2122	Latin Reading: Epistolography
CLASS	1740	Sanskrit 4	LATIN	2190	Topics in Latin
			LATIN	2200	Latin Seminar: Epic
			LATIN	2202	Latin Seminar: Drama
			LATIN	2206	Latin Seminar: Lyric
			LATIN	2208	Latin Seminar: Pastoral
			LATIN	2210	Latin Seminar: Satire
			LATIN	2212	Latin Seminar: Elegy
			LATIN	2214	Latin Seminar: Novel
			LATIN	2216	Latin Seminar: Historians
			LATIN	2218	Latin Seminar: Orators
			LATIN	2220	Latin Seminar: Philosophers
			LATIN	2222	Latin Seminar: Epistolography
			LATIN	2230	Latin Seminar: Special Topics
			LATIN	2300	Latin Palaeography
			LATIN	2990	Independent Study
			LATIN	2992	Graduate Reading Examination

Graduate reading courses and seminars in Greek and Latin are offered in the Fall and Spring Terms; they may be repeated for credit provided that the author and/or works treated are different. Other 2000 courses are offered from time to time as the need arises.

CLASS	2210	Social History of Ancient World
CLASS	2300	Studies in Ancient Philosophy
CLASS	2310	Studies in Presocratic Philosophy
CLASS	2312	Studies in Plato
CLASS	2314	Studies in Aristotle
CLASS	2316	Studies in Hellenistic Philosophy
CLASS	2390	Topics in Ancient Philosophy
CLASS	2902	Directed Study For MA Students
CLASS	2970	Teaching of Greek
CLASS	2971	Teaching of Latin

COMMUNICATION

The Department of Communication offers the MA and PhD degrees in Rhetoric and Communication. Prior to January of 1996, the department also included a program in Communication Science and Disorders. For more information on that program, which is now part of the **School of Health and Rehabilitation Sciences (SHRS)**, call (412) 383-1344 and see **SHRS's** section of this bulletin, beginning on page 237.

The areas of major emphasis in the department are rhetorical theory and criticism, political communication, public argument, philosophy and rhetoric, rhetoric of science, communication theory, communication and production of meaning, and media studies.

CONTACT INFORMATION

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 Web site: <http://www.pitt.edu/~fasgrad/>

Additional information may be obtained by contacting the Director of Graduate Studies; Department of Communication; University of Pittsburgh; Pittsburgh, PA 15260.

ADMISSIONS

The department offers programs leading to the MA and PhD degrees. Admission is highly selective. In order to be admitted to graduate standing, students must meet the admission requirements of the **Faculty of Arts and Sciences** and supply materials called for in the department's application packet. Materials to be submitted by January 1 are:

- Graduate Record Examination scores
- TOEFL scores (for non-native speakers)
- Certified copies of all post-secondary educational records
- Three letters of recommendation
- A statement of purpose
- A writing sample

Those requesting admission without a teaching assistantship have until April 1 to apply.

FINANCIAL ASSISTANCE

The department has a limited number of teaching assistantships each year, which are renewable for up to four years, depending upon circumstances. They include full tuition scholarships. There are also several fellowships as well as financial assistance for minorities available through the University. *See Fellowships and Traineeships on page 36 and Financial Aid on page 7 for further detail.*

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations

beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with department-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

Master of Arts candidates must take a total of 30 credits. Six of these credits may be from another department. After the completion of 30 credits, candidates will be examined by the department's Comprehensive Committee. In addition, candidates are required to complete two major research papers or a master's thesis.

REQUIREMENTS FOR THE PhD DEGREE

Candidates for the PhD degree must meet the general requirements of the **Faculty of Arts and Sciences** regarding preliminary and comprehensive examinations, overview or prospectus meeting, dissertation, and oral defense. (*See Requirements for the PhD Degree in the FAS section of this bulletin on page 40 and Regulations Pertaining to Doctoral Degrees on page 23.*) A minimum of 72 credits beyond the baccalaureate is required, including 12 dissertation credits. Twelve of these credits must be taken from another related department.

COURSE LISTINGS

RHETORICAL THEORY AND CRITICISM

COMMRC 2201	Seminar in Rhetorical Criticism
COMMRC 2203	Philosophy and Rhetoric
COMMRC 2205	Neo-Aristotelian Rhetoric
COMMRC 2217	Modern Theories of Rhetoric
COMMRC 2245	Seminar in Classical Rhetoric
COMMRC 3302	Seminar in Rhetorical Criticism
COMMRC 3317	Seminar in Rhetorical Theory

RHETORIC OF SCIENCE

COMMRC 2204	Myth, Ideology, and Science
COMMRC 2285	Science and its Rhetoric
COMMRC 3340	Rhetoric and Communication in Science Policy
COMMRC 3343	Rhetoric in the Social Sciences

PUBLIC ARGUMENT

COMMRC 2213	American Public Argument
COMMRC 2214	Contemporary Public Argument
COMMRC 3306	Rhetoric and Culture
COMMRC 3314	Seminar in Public Argument
COMMRC 3319	Seminar in Presidential Rhetoric

COMMUNICATION THEORY AND RESEARCH

COMMRC 2233	Theories and Models of Communication
COMMRC 3333	Contemporary Viewpoints in Communication Theory
COMMRC 3336	Special Topics in Communication

COMMUNICATION AND PRODUCTION OF MEANING

COMMRC 2263	Research in Interpersonal Communication
COMMRC 2265	Research in Small Group Communication
COMMRC 3339	Seminar in Nonverbal Communication

COMMRC 3363	Seminar in Interpersonal Communication
COMMRC 3365	Seminar in Small Group Communication
COMMRC 3367	Practicum in Interpersonal and Small Group Research

MEDIA STUDIES

COMMRC 2226	Media and Cultural Studies
COMMRC 2227	Media Theories
COMMRC 2229	Global Cultures
COMMRC 3325	Seminar in Mass Communication
COMMRC 3326	Seminar in Media Studies

ADDITIONAL COURSE OFFERINGS**ARGUMENTATION AND SOCIAL INFLUENCE**

COMMRC 2206	Theories of Evidence
COMMRC 2242	Nonverbal Communication

RESEARCH METHODS

COMMRC 2201	Seminar in Rhetorical Criticism
COMMRC 2202	Historical Methods in Rhetoric
COMMRC 2230	Communication Research 1
COMMRC 3330	Communication Research 2
COMMRC 3331	Communication Research 3
COMMRC 3332	Qualitative Research Methods in Communication
COMMRC 3382	Seminar in Communication Research Methodology

GENERAL

COMMRC 2000	Research and Thesis for the Master's Degree
COMMRC 2990	Independent Study
COMMRC 3000	Research and Dissertation for the PhD Degree
COMMRC 3902	Directed Study

COMPUTER SCIENCE

The department offers programs of graduate study leading to the Master of Science and Doctor of Philosophy degrees in Computer Science. The MS program, with thesis or non-thesis options, has two specialized areas of concentration available: Software Engineering and Artificial Intelligence.

CONTACT INFORMATION

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RESEARCH

The Department of Computer Science faculty research areas encompass a broad range of computer science specialties in four general areas and include a wide variety of applications. The research areas and respective topical interests include:

- (1) Algorithms and theoretical foundations: computational complexity, design and analysis of algorithms, distributed algorithms, online algorithms, theory of learning algorithms, and probabilistic algorithms
- (2) Parallel and distributed systems: computer architectures, computer networks, database systems, distributed systems, fault tolerance, fine-grained systems, image processing, modeling and simulation, operating systems, optical computing, parallel computation, parallelizing compilers, performance evaluation, real-time systems, scientific computation, VLSI CAD, and VLSI processor arrays
- (3) Software systems and interfaces: design of programming languages, software development environments, software engineering techniques, specification and verification, debugging and testing, user interface software technology, computer graphics techniques, multimedia interfaces, and visual languages
- (4) Artificial intelligence: cognitive modeling of learning, computational biology, expert systems, explanation, intelligent tutoring systems, machine learning, natural language processing, and planning

FACILITIES

Students and faculty in the Department of Computer Science access computing facilities in a distributed network environment. The network interconnects nearly 300 systems, workstations, and other devices and supports a wide variety of architectures and platforms. Multiple servers provide file, computer, software, and print facilities. Optical fiber-based Ethernet links tie the department to the campus backbone, PITTNET, which is based on dual 100 Mbps FDDI rings. PITTNET provides such Ethernet links to all University facilities and also to the Pittsburgh Supercomputer Center. Systems housed at the PSC include a Cray C90, a Cray T3E, and a Digital AlphaCluster. The University of Pittsburgh and other universities in Pennsylvania are linked to the Internet by means of several network service providers.

INTERDISCIPLINARY PROGRAMS

The Department of Computer Science is a participant in a number of interdisciplinary programs. Besides offering a dual MS degree in Computer Science and Mathematics, Department of Computer Science faculty are very actively involved in the Intelligent Systems Program, the Keck Center for Advanced Training in Computational Biology, the Computer Engineering Program (with the **School of Engineering**), and the Telecommunications Program (with the **School of Information Sciences**).

ADMISSIONS

To be considered for admission to graduate study in the Department of Computer Science, a student must have received a bachelor's degree with at least a B average from an accredited college or university. Those who have been working professionally in the computer field may be given special consideration. However, the professional computer scientist must be knowledgeable in a number of areas besides programming. Thus, the applicant whose enthusiasm for programming has led to the acquisition of considerable programming skill at the expense of satisfactory academic achievement is generally not regarded favorably. Students are required to submit general GRE scores. The advanced GRE score in computer science is recommended. For foreign students, the TOEFL score is also required; a minimum score of 550 is required for admission.

PREREQUISITES FOR GRADUATE STUDY

To be admitted to full graduate status, an applicant should minimally have completed the following courses or their equivalents.

- In computer science, a total of at least six courses.
 1. All of the following core courses:
 - a. Discrete Structures (CS 0441)
 - b. Information or Data Structures (CS 0445)
 - c. Computer Organization/Assembly Language (CS 0447)
 2. One in each of the following advanced course categories:
 - a. Theory of Computer Science (CS 1510 or CS 1511)
 - b. Programming Languages Design (CS 1520 or CS 1621)
 - c. Systems Software (CS 1550 or CS 1651)
- In mathematics, a total of at least five courses.
 1. Three calculus courses (MATH 0220, 0230, 0240)
 2. One course in linear algebra (preferably MATH 1180 or 0280)
 3. One course in probability and statistics that explicitly requires calculus as a prerequisite (STAT 1151 or 1152)

Part-time graduate students are welcome, but the Department of Computer Science cannot guarantee that a degree can be earned solely through attendance in late afternoons and evenings.

FINANCIAL ASSISTANCE

A number of financial aid opportunities are available on a competitive basis. Many of these positions are teaching assistantships or fellowships requiring approximately 20 hours of work per week in conjunction with the department's curriculum. A foreign student needs a TOEFL score of at least 600 in order to be considered for a teaching assistantship or fellowship. Because of substantial amounts of research funding awarded to Department of Computer Science faculty, they also offer a number of graduate research assistantships. Other opportunities, such as special fellowships, occur with varying frequency.

Financial need should be indicated on the application form. The Department of Computer Science is anxious to provide assistance whenever warranted and possible, but the applicant must be eligible for full graduate status in order to be considered for an assistantship or fellowship. Each such appointment is normally supplemented with a scholarship to cover tuition and individual medical insurance.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with department-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

The MS program has been designed to attract students with a broad spectrum of interests who may have specialized in any of a wide variety of disciplines as undergraduates. The requirements for the Master of Science degree in Computer Science are:

COMPLETION OF THE FOLLOWING COURSES:

1. Three required courses:
 - a. CS 1510 or CS 1511¹
 - b. CS 2410 or CS 2510
 - c. CS 2210 or CS 2710
2. Five elective, graduate-level courses in CS
3. Either:
 - a. A six-credit (minimum) MS thesis (CS 2000), or
 - b. A three-credit MS project (CS 2910) and one additional course

THESIS/PROJECT REQUIREMENT:

This satisfies the FAS comprehensive examination requirement.

1. For the thesis option, a written thesis is required, with a final oral examination conducted by the faculty advisor and a thesis committee.
2. For the non-thesis option, a project report must be produced and defended before the faculty advisor.

GENERAL REQUIREMENTS INCLUDE:

1. All courses except project or thesis must be taken for a letter grade.
2. The student must receive a grade of C or better for each course, and must maintain an overall average of B or better.
3. Other requirements, options, and procedures are detailed in the department's current *Regulations for Graduate Study*.

SPECIALIZED MASTER OF SCIENCE TRACKS

The Department of Computer Science currently offers two specialized MS Areas of Concentration: one in Artificial Intelligence and one in Software Engineering. The decision to choose one of these areas of concentration can be made after admission to the MS program. Successful completion of the requirements for these areas of concentration results in a transcript that reads "Master of Science in Computer Science/Area of Concentration: Artificial Intelligence" (or "Software Engineering"). All the requirements for the traditional MS described above must be completed for the specialized tracks. There are special, additional requirements in the elective course selections. Students interested in either specialization should consult the department's Graduate Secretary at (412) 624-8495 and/or the faculty member designated as currently responsible for the track.

REQUIREMENTS FOR THE PHD DEGREE

The program has been designed with both structure and flexibility in mind. The structure assures the quality of the program and establishes checkpoints that serve to inform both student and faculty of progress being made. The flexibility of the program is necessary to accommodate individual student differences and aspirations. The program consists of three basic parts: the course-requirement block as specified below, an individually tailored block of student-elected courses and seminars, and a research block. The requirements for the Doctor of Philosophy degree in Computer Science are:

¹If an MS student has already taken CS 1510 or CS 1511 or an equivalent course prior to enrollment, and received a B or better, then the student must either take the other course or one of CS 2110 or CS 2150. If a student has already taken both CS 1510 and CS 1511 or equivalent courses prior to enrollment, and received a B or better, then the student must take one of CS 2110 or CS 2150.

COMPLETION OF THE FOLLOWING COURSES:

1. CS 2110, CS 2150, CS 2210, CS 2410, CS 2510, and CS 2710. These six courses represent the core areas and are required.
2. Any additional six graduate (2000-level or higher) courses, including at least two at the 3000 level. None of these six courses can be independent studies, directed research, or thesis or dissertation research.

NOTE: All courses must be taken for a letter grade. The student must receive a grade of B or better in each of the core courses, and a grade of C or better in each of the six additional courses. In addition, he or she must maintain an average of B or better. Only 2000- or 3000-level courses are acceptable; 1000-level courses and below do not count toward the PhD degree.

PHD PRELIMINARY EXAMINATIONS:

These are designed to determine that a student in the PhD program has the breadth of knowledge to undertake independent research in computer science.

The student is expected to:

1. Take at least one core-area exam per year starting in the third term of full-status registration.
2. Pass four out of the six core area exams within three years after full-status registration. A student may attempt each area exam twice.

COMPREHENSIVE EXAMINATIONS:

After completing most of the additional courses and seminars comprising the remainder of the program and after selecting a dissertation topic, the student must pass both an oral comprehensive examination and an examination of his/her dissertation proposal. The purpose of the comprehensive examination is to determine that a student has sufficient depth of knowledge in a specialized area of computer science to undertake dissertation research on a topic in that area. The purpose of the dissertation proposal presentation and examination is for the student's Faculty Committee to (a) judge the dissertation topic and the student's preparedness for it, and (b) give substantive feedback to the student on the topic and the methods of research to be used. Normally, the comprehensive examination should be completed within one to two years of passing the preliminary examinations.

RESIDENCY REQUIREMENT:

The student is required to spend at least two successive terms in full-time graduate study during the degree program. This residency requirement must be satisfied by the end of the term in which the comprehensive examination is taken.

DISSERTATION:

The research block requires that the student perform research and write a dissertation describing an original investigation in the student's area of specialization. An open, oral defense of the dissertation is also required.

COURSE LISTINGS

CS	1501	Data Structures and Algorithms
CS	1502	Formal Methods in Computer Science
CS	1510	Design and Analysis of Algorithms
CS	1511	Introduction to the Theory of Computation
CS	1515	Scientific Computation
CS	1520	Programming Languages
CS	1530	Software Engineering
CS	1538	Introduction to Simulation
CS	1541	Introduction to Computer Architecture
CS	1550	Introduction to Operating Systems
CS	1555	Database Management Systems
CS	1566	Introduction to Computer Graphics
CS	1571	Introduction to Artificial Intelligence
CS	1573	Artificial Intelligence Programming
CS	1590	Social Implications of Computing Technology
CS	1621	Structure of Programming Languages
CS	1622	Introduction to Compiler Design
CS	1631	Software Design Methodology
CS	1645	Introduction to High Performance Computing
CS	1651	Advanced Systems Software
CS	1652	Data Communication and Computer Networks
CS	1900	Internship
CS	1950	Directed Study
CS	2000	Research and Thesis for the Master's Degree
CS	2110	Theory of Computation
CS	2150	Design and Analysis of Algorithms
CS	2210	Compiler Design
CS	2310	Software Engineering
CS	2410	Computer Architecture
CS	2450	Parallel Computing
CS	2510	Computer Operating Systems
CS	2520	Wide Area Networks
CS	2550	Principles of Database Systems
CS	2610	Interface Design and Evaluation
CS	2650	Distributed Multi-media Systems
CS	2710	Foundations of Artificial Intelligence
CS	2750	Machine Learning and Communication
CS	2900	Graduate Internship
CS	2910	MS Project
CS	2990	Independent Study
CS	3000	Research and Dissertation for the PhD Degree
CS	3110	Advanced Topics in Theory of Computation
CS	3120	Theory of Learning Algorithms
CS	3150	Advanced Topics in Design and Analysis of Algorithms
CS	3210	Advanced Topics in Programming Languages
CS	3220	Compiling Techniques for Parallel Systems
CS	3230	Advanced Compiler Techniques
CS	3310	Advanced Topics in Software Engineering

CS	3320	Specification and Design of Software Systems
CS	3350	Modeling and Simulation
CS	3410	Advanced Topics in Computer Architecture
CS	3420	Fault Tolerant Parallel and Distributed Systems
CS	3450	Advanced Topics in Parallel Computing
CS	3510	Advanced Topics in Operating Systems
CS	3520	Advanced Topics in Computer Networks
CS	3530	Advanced Topics in Distributed and Real-Time Systems
CS	3550	Advanced Topics in the Management of Data
CS	3610	Advanced Topics in Human-Computer Interaction
CS	3630	Interactive Computer Graphics
CS	3650	Visual Languages and Programming
CS	3710	Advanced Topics in Artificial Intelligence
CS	3720	Advanced Topics in Expert Systems
CS	3730	Natural Language Processing
CS	3740	Knowledge Representation
CS	3750	Advanced Topics in Machine Learning
CS	3760	Advanced Topics in Computational Rationality
CS	3790	Pattern Recognition
CS	3900	PhD Directed Study

Each term the program offers a series of core and designated courses open to any interested graduate student. In order to fulfill its interdisciplinary commitment, the program presents a common seminar to encourage ongoing interaction between students and faculty; courses team-taught by scholars from various departments throughout the University; one- or two-day colloquia, workshops, or seminars with faculty both inside and outside the University; a series of lectures by well-known scholars, followed by seminars for students with the speaker. Invited speakers have included Stanley Aronowitz, Homi Bhabha, Peter Brooks, Jacques Derrida, Stuart Hall, Fredric Jameson, Richard Rorty, and Alan Sokal.

The program offers programs leading to a master's degree certificate or a doctoral certificate in Cultural Studies.

CONTACT INFORMATION

Main Office: 1301 Cathedral of Learning
 Phone: (412) 624-7232
 Fax: (412) 624-4575
 E-mail: cultural@pitt.edu
 Web site: <http://www.pitt.edu/~cultural>

Director: Nancy Condee

Affiliated Faculty: ANDRADE (English), ARAC (English), BAKER (History), BEVERLY (Hispanic Languages and Literatures), BOONE (English), BOVÉ (English), BRUSH (Sociology), CARR (English), CITTON (French and Italian Languages and Literatures), CLARK (Communication), CLARKE (English), CLOTHEY (Religious Studies), COLIN (Germanic Languages and Literatures), CONDEE (Slavic Languages and Literatures), DRESCHER (History), EDWARDS (Religious Studies), ENGSTROM (Philosophy), FARARO (Sociology), FAVORINI (Theatre Arts), FEUER (English), FISCHER (English), FUSFIELD (Communication), GAUTHIER (Philosophy), GILL (Classics), GOSCILO (Slavic Languages and Literatures), GRÜNBAUM (Philosophy), HAKE (Germanic Languages and Literatures), HALL (History), HARRIS (History of Art and Architecture), HARRIS (Slavic Languages and Literatures), HASHIMOTO (Sociology), HAYDEN (Anthropology), HIBBITTS (Law), JONES (Classics), JUDY (English), KANE (Religious Studies), KNAPP (English), KRIPS (Communication), KRIPS (English), LANDY (English), LENNOX (History and Philosophy of Science), LEWIS (Medicine), LIVEZEANU (History), LOONEY (French and Italian Languages and Literatures), LU (East Asian Languages and Literatures), LYNE (Communication), MacCABE (English), MACHAMER (History and Philosophy of Science), MARKOFF (Sociology), MARTIN (Hispanic Languages and Literatures), MASSEY (Philosophy), McCLOSKEY (History of Art and Architecture), McCONACHIE (Theatre Arts), McGUIRE (History and Philosophy of Science), MORANA (Hispanic Languages and Literatures), MORENO (Sociology), MUENZER (Germanic Languages and Literatures), NORTON (History and Philosophy of Science), NOVY (English), NUTINI (Anthropology), ORBACH (Religious Studies), PADUNOV (Slavic Languages and Literatures), PETERS (Political Science), POULAKOS (Communication), PURI (English), RAWSKI (History), RIMER (East Asian Languages and Literatures), RINGER (History), RUSSELL (French and Italian Languages and Literatures), SAVAGE (History of Art and Architecture), SAVOIA (French and Italian Languages and Literatures), SCHEUERMAN (Political Science), SEITZ (English), SHEON (History of Art and Architecture), SMETHURST (Classics), STABILE (Communication), STRATHERN (Anthropology),

CULTURAL STUDIES

The Program for Cultural Studies is an interdisciplinary program concerned with the dynamics of culture on a global scale. It provides an institutional forum for responding to the increasing need to comprehend the role and formation of culture beyond national boundaries and disciplinary divisions. Starting from the early 1960s, centers, programs, and journals have attempted to address new questions imposed by changing relations and communications among nations since World War II. In the 1980s, programs and institutions in cultural studies began to be formally established in this country. The Program for Cultural Studies at the University of Pittsburgh was created in the mid-1980s; it incorporates faculty from most departments in the humanities and the social sciences, and from some professional schools in the University. The program attracts students at the University of Pittsburgh who wish to work beyond the confines of the existing departmental structures.

The program addresses debates concerning the theory of texts and their production; the relationship between culture and politics; the formation of disciplines and institutions; and the nature of cultural antagonisms and crises. It features a variety of recent methodologies of historical and textual interpretation, and offers students opportunities to work with faculty and other students from the following departments, programs, and schools: Anthropology, Classics, Communication, East Asian Languages and Literatures, English, Film Studies, French and Italian Languages and Literatures, Germanic Languages and Literatures, Hispanic Languages and Literatures, History, History and Philosophy of Science, History of Art and Architecture, Law, Medicine, Music, Philosophy, Political Science, Public and International Affairs, Religious Studies, Slavic Languages and Literatures, Sociology, and Theatre Arts.

THOMPSON (Philosophy), TOBIAS (English), TWYNING (English), VENARDE (History), VON DIRKE (Germanic Languages and Literatures), WATTS (French and Italian Languages and Literatures), WEINTRAUB (Music), WEIS (History of Art and Architecture), YOUNG (Public and International Affairs)

PUBLICATIONS

Cultural Studies faculty edit journals of international renown, including *boundary 2* and *Critical Quarterly*, leading publications in the study of culture.

ADMISSIONS

Students who wish to apply to the certificate program must be enrolled in a graduate or professional program at the University of Pittsburgh and must be in good academic standing.

The master's certificate in Cultural Studies is granted only after the completion of all degree requirements for the MA (or corresponding degree) in the student's home department, school, or program. The doctoral certificate can be awarded only after the student has been admitted to candidacy for the PhD (or corresponding degree). A student may earn either a master's certificate or a doctoral certificate, but not both.

FINANCIAL ASSISTANCE

One-year fellowships are awarded annually to outstanding resident students.

REQUIREMENTS FOR THE MASTER'S CERTIFICATE

The following are course requirements for the master's certificate in cultural studies:

- Common Seminar
- One core course from group A or B (see *Courses* below)
- One designated Cultural Studies course in the student's home department or school
- One designated Cultural Studies course outside the student's home department or a course from group C

REQUIREMENTS FOR THE DOCTORAL CERTIFICATE

The following are course requirements for the doctoral certificate in cultural studies:

- Common Seminar
- Three core courses (one from each group)
- One designated Cultural Studies course in the student's home department or school
- One designated Cultural Studies course outside the student's home department

Students from departments without foreign language requirements are expected to demonstrate the ability to use primary and secondary texts in one language other than English. Courses are regularly offered in the language departments toward the achievement of this level of reading proficiency.

COURSE LISTINGS

General descriptions of the courses offered within the Cultural Studies Program are detailed below.

COMMON SEMINAR

This course, offered annually, is designed to give students the opportunity to interact with faculty and other students from Cultural Studies and other departments, programs, and schools. Recent Common Seminars have been: Evidence and Argument in the Human Sciences; Myth, Ideology, and Science; and Identity.

CORE COURSES

Core courses in cultural studies are broken into three groups: text and theory; disciplines and intellectual movements; and cultural antagonisms and cultural crises.

■ (Group A) Text and Theory

Courses in this group provide training in the study of textual practices and literary theories. They review contemporary critical approaches, identify the rhetorical elements in a variety of textual practices (including film), examine the work of recent criticism and theory, and evaluate the reception of texts and their ideological implications. Included in this group are such courses as:

COMMRC 2229 Media and Global Cultures
RELGST 2830 Cultural Critics

■ (Group B) Disciplines and Intellectual Movements

Courses in this group focus on the relationship between the cultural, the social, and the political; the relationship between interpretation and explanation; the history of intellectual movements beyond national borders; the formation of fields of knowledge, disciplines, and genres; and the historical conditions in which disciplines are institutionalized, as well as the intellectual modes of their assessment. Included in this group are such courses as:

SOC 2302 Sociology of Religion
HPS 2690 History and Philosophy of Psychology

■ (Group C) Cultural Antagonisms and Cultural Crises

Courses in this group explore, compare, and contrast the nature and consequences of historical moments and intellectual debates particularly rife with cultural and social upheavals. Such crucial confrontations may be geographical (north-south, east-west); they may involve issues of individuality versus collectivity (revolutions, nationalism, ethnicity); or they may explore distinct cultural oppositions (pop culture and high culture, scientific models of knowledge and humanistic models of knowledge). These courses have included:

PHIL 2650 Philosophy and Psychoanalysis
ENGLIT 3104 Made in U.S.A.: America in French Culture

DESIGNATED COURSES

Each term the program cross-lists several designated courses offered in various departments, programs, and schools. Included in this group have been such courses as:

ENGLIT	2021	History and Spectacle
HPS	2663	Perception
HPS	2685	Science and Its Rhetoric
GER	2702	Double Outcasts
RELGST	2745	Ritual Process

EAST ASIAN LANGUAGES AND LITERATURES

The interdisciplinary MA degree in East Asian Studies is granted through the Department of East Asian Languages and Literatures; the Asian Studies Program, which is part of the **University Center for International Studies**, administers the IDMA. Courses are taught by faculty members who specialize in East Asia and who are in different academic departments and schools. The interdisciplinary MA in East Asian Studies is a two-year program that combines advanced language training with study in the social sciences and humanities focusing on East Asia. It is primarily intended for predoctoral students who desire intensive area training before choosing a doctoral program in a single discipline or for those planning professional careers in government, business, journalism, or pre-college teaching. The strength of this interdisciplinary approach lies in the fact that students are able to elect to work with faculty in a wide variety of disciplines, as well as pursue courses in a number of different areas throughout the humanities and social sciences.

CONTACT INFORMATION

Department Chair: J. Thomas Rimer
 Main Office: 1501 Cathedral of Learning
 Phone: (412) 624-5568
 Fax: (412) 624-3458
 Web site: <http://www.pitt.edu/~fasgrad>

ADMISSIONS

In addition to evidence of academic promise, applicants generally should have had at least one year of Chinese or Japanese language study. However, applicants with strong academic credentials who have no previous language training will be given serious consideration if they can show how an interdisciplinary language and area program in East Asian Studies will contribute to their long-term goals. If remedial or prerequisite classes are needed to prepare the student, additional course work and time may be necessary.

For complete detail on admissions requirements and procedures see Admission to the MA Program below.

FINANCIAL ASSISTANCE

A limited number of teaching assistantships are offered through the Department of East Asian Languages and Literatures. The duties are to assist in the Chinese and Japanese language programs.

FACULTY ADVISORY COMMITTEE

Ann B. Jannetta (Academic Director)
 J. Thomas Rimer
 Bell Yung

Administrator: Dianne F. Dakis

ADMISSION TO THE MA PROGRAM

The undergraduate QPA must be more than 3.00 on a 4.00 scale for applicants to qualify for admission to the MA program. The official application form must be supported by the following documents:

- Original transcripts
- GRE scores
- Three letters of recommendation should be sent directly to the Department of East Asian Languages and Literatures
- Non-native English speakers must submit an original copy of TOEFL scores and must have achieved at least 600 on that exam
- A two-page Statement of Purpose that describes how the IDMA can fulfill the student's academic and intellectual goals
- A paper that demonstrates the applicant's writing skills

The deadline each year for submitting applications is January 15 for admission the following Fall Term. Students are not accepted in the middle of the year (Spring Term). Notification can be expected by the middle of March.

For application materials please contact:
 Graduate Secretary
 Department of East Asian Languages and Literatures
 1501 Cathedral of Learning
 University of Pittsburgh
 Pittsburgh, PA 15260
 Phone: (412) 624-5569
 Fax: (412) 624-3458
 Web site: <http://www.ucis.pitt.edu/>

ADMISSION TO THE MA/MBA JOINT-DEGREE PROGRAM

Qualified students may simultaneously earn a master's degree in Business Administration and an interdisciplinary Master of Arts in East Asian Studies. Students enrolled in the joint-degree program take MBA and MA course work concurrently. Students will normally be expected to complete the program in five consecutive terms, beginning in the Fall Term of the first academic year and ending in the Spring Term of the following year. Students may, however, extend their program of study in order to pursue further language acquisition or an internship.

Prospective students must meet the full set of admission requirements for MBA study in the **Joseph M. Katz Graduate School of Business** and for the MA program of graduate study in the **Faculty of Arts and Sciences**. Students should first apply for admission to the MBA program. (*See MBA Application Procedures and Deadlines on page 154 for MBA admission requirements.*) After admission to the MBA

program, applicants to the MA program will be assessed by review panels of appropriate **Faculty of Arts and Sciences** faculty.

To obtain MBA application forms, contact:
Office of Admissions
Joseph M. Katz Graduate School of Business
University of Pittsburgh
Pittsburgh, PA 15260
Phone: (412) 648-1700
Fax: (412) 648-1659
E-mail: mba-admissions@katz.business.pitt.edu

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with specific departmental degree requirements described in the following sections.

REQUIREMENTS FOR THE MA DEGREE IN EAST ASIAN STUDIES

Students pursuing the interdisciplinary MA degree must satisfy the following requirements:

COURSE REQUIREMENTS

The MA in East Asian Studies requires a minimum of 24 credits of course work (excluding language credits) in two or more departments. The student and faculty advisor work together to plan a coherent program designed to assure the mastery of specific knowledge and skills, and an interdisciplinary focus.

LANGUAGE REQUIREMENT

Three years of college-level study or its equivalent are required to fulfill the language requirement for the degree. Students typically enter the graduate program with some prior Chinese or Japanese language training and continue that work during their graduate studies at the University of Pittsburgh.

COURSE OUTSIDE SPECIALIZATION

Students who specialize in China must take at least one three-credit course on Japan; and those who specialize in Japan must take at least one three-credit course on China.

HISTORY COURSES

Six of the required credits must be taken in course work relating to the ancient and modern history of either China or Japan.

THESIS

The thesis topic must be approved by the student's academic advisor and faculty committee. The thesis must show an ability to use East Asian language materials.

ORAL COMPREHENSIVE EXAMINATION

When course work and thesis are completed, the student must pass an oral comprehensive examination administered by the student's faculty committee. The faculty committee must represent at least two academic departments.

CERTIFICATE IN ASIAN STUDIES

A certificate is another academic credential, the product of an educational experience that results in concentrated training in or knowledge of an interdisciplinary subject. The graduate-level certificate in Asian Studies is designed for students who wish to intensify their study of Asia. For more information on the Asian Studies certificate, see <http://www.ucis.pitt.edu/asp/>, send E-mail to asia@imap.pitt.edu, or see information about this program on page 365 of the *University Center for International Studies* section of this bulletin.

COURSE LISTINGS

Graduate courses are numbered at the 2000 level. Certain courses at the 1000 level may be taken for graduate credit with permission of the student's graduate advisor. Descriptions of the 1000-level courses are printed in the *Course Descriptions* published each term. In addition, the Asian Studies Program prints a course description booklet of all Asia-related courses throughout the University for each term.

Students not having graduate standing in the Department of East Asian Languages and Literatures must have permission of the instructor before registering for any of the following courses.

EAS	2000	Research and Thesis for the Master's Degree
EAS	2010	Seminar: Masterpieces of Chinese Literature
EAS	2021	Seminar: Chinese Linguistics
EAS	2022	Structure of Modern Chinese 1
EAS	2023	Structure of Modern Chinese 2
EAS	2024	Chinese Pedagogy 1
EAS	2025	Chinese Pedagogy 2
EAS	2026	Materials and Evaluation
EAS	2027	History of Chinese Language
EAS	2047	Chinese and Western Poetry
EAS	2065	Sources on East Asia
EAS	2902	Directed Study
EAS	2990	Independent Study

ECONOMICS

The Department of Economics offers a PhD degree program. While the department does not offer a master's program, continuing students or students dismissed from the PhD program can apply for a Master of Arts degree.

The department offers a broad range of research opportunities for graduate students. Members of the department are engaged in a wide variety of research projects; currently, strength is greatest in the following fields:

- Comparative Systems & Development Economics
- Economic Theory
- Econometrics
- Experimental Economics

- Game Theory
- International Economics
- Labor Economics
- Macroeconomics
- Urban & Regional Economics

Workshops in the fields provide opportunities for experience with research in the early stage of the graduate program. Workshops typically include two or more faculty members and meet in either the Fall or Spring Term. Students are expected to complete much of their field study and research in the workshops.

Virtually all English-language publications in economics are received by the University libraries.

In addition to the training and instruction provided by the department, students may take courses in other departments, and faculty members from other units of the University are available to serve on thesis or dissertation committees within the Department of Economics. In addition, students may elect courses at Carnegie Mellon University. Students working for a graduate degree in economics may simultaneously earn a certificate in the Asian, Latin American, Russian and East European, or West European Area Studies programs (*see certificate descriptions in the University Center for International Studies section beginning on page 365 of this bulletin*).

The department makes available a handbook for graduate students in economics at the start of the academic year. This handbook contains information about rules and procedures that modify and/or clarify the rules and procedures as described in this bulletin.

CONTACT INFORMATION

Department Chair: Jean-François Richard
 Main Office: 4S01 Posvar Hall
 Phone: (412) 648-1760
 Fax: (412) 648-1793
 Web site: <http://www.pitt.edu/~econdept/>

For additional information about degree programs, course offerings and descriptions, please contact the Department of Economics; 4S26 Posvar Hall; University of Pittsburgh; Pittsburgh, PA 15260.

ADMISSIONS

For admission to full graduate status, an applicant must have a bachelor's degree from a recognized college or university and a B or better average in the undergraduate program. All applicants must provide scores on the verbal, quantitative, and analytical Graduate Record Examination (GRE); the GRE advanced test in economics will be helpful for those applicants with a BA, BS, or MA in economics. The Test of English as a Foreign Language (TOEFL) is required if the applicant's native language is not English; this applies where English is not the native language even if English has been the medium of instruction.

For admission to the Department of Economics, an undergraduate major in economics may be helpful but is not required. Knowledge of intermediate microeconomic and macroeconomic theory is strongly

advised. The PhD core courses assume a minimum of two terms of calculus and one term of matrix algebra.

An applicant with less than a B average who presents alternative evidence of superior ability may be admitted to full or provisional graduate status. An applicant who does not meet other requirements may be offered provisional admission provided TOEFL and GRE scores are satisfactory.

Because of the scheduling of courses, students are normally admitted only for the Fall Term. The completed application should be received by the Department of Economics no later than February 1, if admission is sought for September. In exceptional cases, applications will be accepted for admission until April 1. Under no circumstances will applications be accepted after April 1.

FINANCIAL ASSISTANCE

The department generally offers financial support beginning with the first year of graduate study. All assistantships and fellowships offer full tuition scholarships as well as a stipend, and most include medical coverage. Pittsburgh's low housing rates also contribute to the value of a University fellowship. Most financial aid takes the form of teaching assistantships or teaching fellowships. The practice of the department has been to give a student an initial appointment as a TA, and to change this appointment to a TF at the beginning of the term following the passing of both theory examinations. For a student who passes both of these examinations at the end of June of their first year of graduate study, the appointment as a TF would thus begin in the Fall Term.

REQUIREMENTS FOR THE MASTER'S DEGREE

The department does not offer a master's program. However, continuing students or students dismissed from the PhD program can apply for a master's degree under conditions described in the department's handbook for graduate students.

REQUIREMENTS FOR THE PhD DEGREE

The PhD program of the department has three goals: to advance economic knowledge through an intensive and balanced research program, to develop the research skills essential to independent study of current economic problems, and to provide the training needed for effective teaching of economics.

The following requirements specific to economics should be read in conjunction with the general PhD requirements for all FAS students. (*See Requirements for the PhD Degree on page 40 and Regulations Pertaining to Doctoral Degrees on page 23.*)

REQUIRED COURSES

The following courses must be completed:

■ **Theory Courses**

- ECON 2100 Advanced Micro Theory 1
- ECON 2110 Advanced Macro Theory 1
- ECON 2120 Advanced Micro Theory 2
- ECON 2130 Advanced Macro Theory 2

■ Econometrics Courses

ECON 2020 Introduction to Econometrics

ECON 2150 General Econometrics

A minimum grade of B is required in both courses.

■ Mathematics Courses

ECON 2010 Mathematical Methods of Analysis

Students with strong math backgrounds can petition the Graduate Committee for exemption from this requirement.

Advanced calculus, differential equations, linear algebra, one term of matrix algebra, and a course in probability and statistics are prerequisites for the above course requirements.

The above, required courses are generally completed in the first two terms of study.

MINIMUM CREDIT REQUIREMENT

Students must complete at least 72 credits in course, seminar, and independent and directed study at the 1000 (not all 1000-level courses carry graduate credit), 2000, and 3000 levels. Some of these may be transfer credits.

In addition to completing the courses listed under *Required Courses* above, each full-time student must complete 18 credits of elective graded courses in the second year and 12 credits in graded course work in the third year.

EXAMINATIONS

Students pursuing the PhD must complete the Preliminary and Comprehensive Exams as detailed below:

■ PhD Preliminary Exam

The PhD Preliminary Theory exam consists of a four-hour exam in Microeconomic Theory and a four-hour exam in Macroeconomic Theory. The University's PhD preliminary examination is a requirement. A student must pass both exams to continue in the program.

In order to take a preliminary exam, students must be registered and have a minimum QPA of 3.00. A student who is deficient in his/her QPA may petition the Graduate Committee for special permission to take the exam.

The exam is to be taken at the end of the Spring Term (late April) of a student's first year as a PhD student. On the first attempt, both parts must be taken during the same exam week. If either or both parts are failed the first time, the relevant part(s) may be retaken during the next examination period (late August). Student are always permitted a second attempt. A student may petition for a third attempt, which will be decided at the discretion of the Graduate Committee. Students who are denied a third attempt and those who do not succeed on the third attempt will be dismissed from the graduate program.

■ PhD Comprehensive Exam

All students are required to complete an original research paper demonstrating their ability to do research in economics before the start of the third year of study. This research paper serves as their comprehensive exam requirement, and passage is required for continuation in the program. The time line for completion of this paper is as follows:

1) Submission of a research proposal by the end of the second week of April. The proposal should state the problem or

“question” the student intends to address as clearly as possible, how the student's work fits into the relevant literature, and what will be the student's original contribution. The proposal should provide as much detail as possible on the methods the student will use to address the problem. The proposal should list two faculty members to supervise the project. These faculty members should be consulted prior to the submission.

- 2) Faculty acceptance of the proposal by May 1. By accepting the proposal, the two faculty members commit to the responsibility of supervision of the second year paper to completion of the review process. This is not, however, a commitment to supervision of the dissertation.
- 3) Submission of a complete paper by the close of the final full week of August.
- 4) Thirty-minute presentations in the graduate student seminar which occurs between the first week of September to mid October. Both advisors should be present, as well as a member of the Graduate Committee.
- 5) Referee reports by advisors to students by the end of October. At this stage the advisors can recommend passage, revision, or failure. If necessary, the Graduate Committee meets during the first week of November to discuss recommendations of failure.
- 6) Students asked to revise their projects can resubmit the paper by February 1.
- 7) Advisors submit pass or failure grades to the Graduate Committee by February 15.

FIELD REQUIREMENTS

Students are required to be certified in two fields, a research field and an outside field, that are in separate areas of research. The areas of research include the following:

- **Microeconomics** (Game Theory, Advanced Micro Theory, Experimental, Industrial Organization)
- **Macroeconomics** (Advanced Macro Theory, Money and Banking)
- **Applied Micro** (Labor, Urban and Regional)
- **International, Comparative and Development** (Comparative, Development, Areas Studies)
- **Econometrics**

Each of these fields has a workshop associated with it—ECON 3100, ECON 3110, ECON 3400, ECON 3500, ECON 3520, and ECON 3160, respectively. The list and definition of fields are continually reviewed and subject to change. Students may request permission from the Graduate Committee to substitute another field of economics. In case of substitution, the course work and the principal examiner must be associated with the Department of Economics. Occasionally, PhD students are permitted to substitute an “outside field,” prepared, for example, in the **Katz Graduate School of Business**, the **Graduate School of Public and International Affairs**, or Industrial Engineering. Permission will not be granted until the student has completed at least one year of graduate study in the Department of Economics.

■ Research Field

In their third year of study, all students are required to make a public presentation of their research in a workshop. The presentation may be based on the student's second-year research paper.

■ **Outside Field (course work)**

The requirements for the second field depend on the field of study. The faculty in each area will determine the requirements for each area and may choose to certify students based on course work and a written paper.

DISSERTATION OVERVIEW

The overview consists of a written statement and oral presentation to the major advisor and tentative doctoral committee on:

- a) The general subject of the proposed dissertation
- b) The principal bodies of source materials to be used
- c) The techniques and methods to be pursued
- d) A survey of the literature relevant to the chosen topic

Candidates may appear for the overview only after they have completed all the comprehensive examinations, and other departmental requirements.

WRITING OF DISSERTATION AND FINAL ORAL EXAMINATION

Conducted by the doctoral committee, the final oral examination is primarily the candidate's defense of the dissertation. Although the examination will deal intensively with the dissertation and its significance, it need not be so confined. One copy of the dissertation must be provided to each member of the doctoral committee at least two weeks before the date set for the final oral exam. The exam is open to the public and must be announced at least two weeks in advance.

COURSE LISTINGS

The course titles suggest the range of topics from which the material for the given term is likely to be selected. The emphasis accorded to any one or more topics may vary with the instructor who is assigned to the course. More complete course descriptions are published prior to each term in the Arts and Sciences *Course Descriptions*. Some courses are offered infrequently.

ECON	1010	American Economic History 1
ECON	1060	Economic and Business History of the U.S.
ECON	1130	Operations Research Methods in Economic Analysis
ECON	1140	Economic Modeling and Forecasting
ECON	1150	Quantitative Methods 1
ECON	1160	Quantitative Methods 2
ECON	1170	Math for Economists
ECON	1180	Mathematical Economics 1
ECON	1200	Introduction to Game Theory
ECON	1230	Intermediate Public Finance
ECON	1260	Intermediate Micro/Business Economics
ECON	1280	Monetary Theory and Policy
ECON	1300	Introduction to Regional Analysis
ECON	1310	Methods of Regional Analysis
ECON	1320	Urban Economics
ECON	1390	Work, Self, Society
ECON	1400	Theories of Labor Unions

ECON	1410	Collective Bargaining
ECON	1420	Intermediate Labor Market Analysis
ECON	1430	Women at Work
ECON	1440	Economics of Corporate Finance
ECON	1450	Modern Theories of Firm and Market
ECON	1470	Industrial Organization
ECON	1480	Government Regulation of Business
ECON	1500	Intermediate International Trade
ECON	1510	Intermediate International Finance
ECON	1520	Analysis of Economic Systems
ECON	1530	Development Economics
ECON	1540	Theory of Economic Growth
ECON	1560	World of Food Economy and Order
ECON	1590	Peoples and Resources of E. Europe and the U.S.S.R.
ECON	1610	Latin American Development
ECON	1620	Economic Development of Socialist Cuba
ECON	1630	Economic Development of China
ECON	1640	Japanese Economic Growth
ECON	1670	Economies of the U.S.S.R. and East Europe
ECON	1700	Proseminar: Methodology of Economics
ECON	1710	Proseminar: International Economics
ECON	1720	Proseminar: Monetary and Macroeconomics
ECON	1730	Seminar: Experimental Economics
ECON	1905	Special Topics
ECON	1960	Politics and Economics of Public Policy
ECON	2001	Introduction to Mathematical Methods
ECON	2010	Mathematical Method Econ Analysis
ECON	2020	Introduction to Economics
ECON	2100	Advanced Microeconomic Theory 1
ECON	2110	Advanced Macroeconomic Theory 1
ECON	2120	Advanced Microeconomic Theory 2
ECON	2130	Advanced Macroeconomic Theory 2
ECON	2150	General Econometrics
ECON	2160	Econometrics for Practitioners
ECON	2170	Mathematical Economics
ECON	2180	Dynamic Economics 1
ECON	2190	Dynamic Economics 2
ECON	2200	Introduction to Game Theory 1
ECON	2210	Introduction to Game Theory 2
ECON	2220	Topics in Experimental Economics
ECON	2230	Public Finance 1
ECON	2250	Individual Research
ECON	2260	Advanced Econometrics 1
ECON	2270	Advanced Econometrics 2
ECON	2280	Monetary Theory
ECON	2290	Monetary Policy
ECON	2300	Regional Economics
ECON	2320	Urban Economics
ECON	2400	Labor Market Analysis

ECON	2410	Labor Market Analysis
ECON	2470	Theory of Industrial Organization
ECON	2490	Earnings and Employment in the Third World
ECON	2500	International Trade
ECON	2510	International Finance
ECON	2520	Comparative Economic Systems
ECON	2530	Development Economics
ECON	2540	Economic Growth
ECON	2560	World Food Economy
ECON	2570	International Trade Policy
ECON	2700	Special Topics in Economics
ECON	2713	Topics in Macroeconomics
ECON	2720	Comprehensive Research Paper
ECON	2730	Seminar in Experimental Economics
ECON	2770	Comprehensive Preparation
ECON	2900	Advanced Topics in Economics
ECON	2930	Research Seminar: Economy of China
ECON	2990	Independent Study
ECON	3000	PhD Research and Dissertation
ECON	3100	Workshop in Microeconomics
ECON	3110	Workshop in Macroeconomics
ECON	3150	Special Topics in Econometrics
ECON	3160	Workshop in Econometrics
ECON	3170	Seminar in Mathematical Economics
ECON	3200	Seminar in Game Theory
ECON	3400	Workshop in Applied Microeconomics
ECON	3500	Workshop in International Economics
ECON	3520	Workshop in Comparative and Development Economics

ENGLISH

CONTACT INFORMATION

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ADMISSIONS

The department offers an MA, MFA, and PhD in English. The PhD emphasizes cultural and critical studies. Admission to graduate standing in English presupposes an undergraduate major of at least 24 credits in English language and literature courses. Students with fewer credits may be required by their advisor to take certain undergraduate courses to make up their deficiencies.

All applications for admission to the graduate programs in literature or cultural studies (MA, PhD) must be accompanied by certified scores on the verbal section of the Graduate Record Examination; the Advanced section of the GRE is optional but highly recommended. Those seeking admission to the graduate programs in writing (MFA) must provide the verbal score. Applications for financial aid must be completed before January 15.

The applicant to the MFA in English should read the department's information about admission requirements, regulations, and teaching assistantships and fellowships and should fill out the standard application form for admission to graduate study in the **Faculty of Arts and Sciences**. The applicant should be familiar with the stipulations that pertain specifically to the writing program and should submit the writing sample, which is described below, in the application to the writing program. The writing sample is particularly important.

Candidates for admission to the MFA in English need not have been undergraduate writing or English majors but should be prepared to submit a sample of recent writing. Applicants will be judged upon Graduate Record Examination scores (general aptitude only in the writing program), undergraduate grades, recommendations, and—especially—writing samples. The applicant should submit as a writing sample approximately 50 pages in fiction or nonfiction or approximately 20 pages in poetry of his/her best work.

Graduate courses are also open to qualified persons who may not be formally enrolled in the graduate program; details are available from the departmental office.

FINANCIAL ASSISTANCE

With the exception of a few competitive fellowships available throughout the **Faculty of Arts and Sciences** (primarily for PhD students in their last years), the Department of English can support students with teaching assistantships and, for PhD students, teaching fellowships.

ADVISING

Dr. Fiore Pugliano, who is knowledgeable about the curriculum, program requirements, departmental policies, and procedures, is the initial academic advisor for graduate students.

DEGREE REQUIREMENTS

Students should consult the *Graduate Student Handbook*, available in 526 Cathedral of Learning, for a fuller description of the requirements and procedures for the MA, MFA, and PhD degrees. *The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with department-specific degree requirements described in the following sections.*

REQUIREMENTS FOR THE MASTER'S DEGREE

The Department of English offers both the MA and the MFA degrees amongst its master's programs. The respective degree requirements are detailed below.

MASTER OF ARTS REQUIREMENTS

Course requirements for the MA are as follows: nine English courses (27 credits). Normally, all nine courses shall be taken at the graduate level (2000- and 3000-series).

For the MA degree, the department requires reading knowledge of one foreign language. French, German, Latin, Classical Greek, Hebrew, Italian, Portuguese, Spanish, and Russian are acceptable languages; others may be offered only with departmental approval. This requirement will be fulfilled by examinations administered by faculty of University language departments or in consultation with members of language departments at other institutions. A student may substitute for the examination a specifically designated graduate course in a language department (requiring extensive translation) passed at the A or B level. Under certain circumstances, language examinations passed at other graduate schools may be applied toward fulfillment of this requirement.

The MA examination requirement is satisfied by passing, with a grade of B or higher, four designated graduate courses—Institutions of Literature (ENGLIT 2040), Practices and Texts (ENGLIT 2567), Seminar in Rhetoric and Literacy (ENGLIT 2700), and Film History/Theory (ENGLIT 2451).

■ MA Students Pursuing the PhD

MA students who wish to continue for the PhD degree should apply in writing to the department's Director of Graduate Studies by February 1 of the year in which they expect to begin PhD studies. Due to the competitive nature of the program, MA students cannot be guaranteed a place in the PhD program. MFA students who wish to enter the PhD program should read the requirements for the MFA degree below.

MASTER OF FINE ARTS REQUIREMENTS

The MFA in English will be awarded for the completion of a minimum of 36 course credit hours with a minimum quality point average of 3.00, plus the completion of an acceptable final manuscript (details later in this section).

■ MFA Credit Requirements

The 36 required credits are distributed as follows:

- Twelve credits are to be earned in four three-credit writing courses, at least nine of the twelve in workshops in the student's area of major interest (fiction, nonfiction, or poetry), and three in a graduate-level readings course. The graduate-level readings course should be taken as early as possible. The first workshop taken upon the student's entering the program should be one in the area of major interest. (Allowance can be made for a student's possible change of mind about the area of major interest.)
- Twelve credits are to be earned in the literature program. Nine are to be earned in English literature courses at the graduate level. A maximum of three may be earned in English or American literature courses at the 1000 level.
- The remaining twelve elective hours may be taken in literature or writing. (See the *Graduate Student Handbook* for restrictions on electives.)

Teaching seminars will not be required of all students; students applying for teaching assistantships or teaching fellowships, however, should note that registration and participation in teaching seminars are required of students holding those positions.

There are no foreign language requirements for the student in the writing program.

■ MFA Final Manuscript Requirement

The final manuscript is equivalent to the MA comprehensive examination. It consists of a book-length manuscript of the student's best work in the area of major interest. The manuscript shall be submitted to a committee of three Department of English faculty members—two writing Graduate Faculty in the student's area of major interest and one member of the literature Graduate Faculty. The student may recommend committee members, but the writing program director has final approval.

■ MFA Students Pursuing the PhD

Students in the MFA program who wish to enter the PhD program will be required to pass the MA examination requirement detailed under Master of Arts Requirements above or they may complete two or three of the MA examination courses and submit a portfolio of work (not from creative writing courses) which they have completed in this department.

REQUIREMENTS FOR THE PhD DEGREE

The PhD emphasizes cultural and critical studies and has been designed to address the intellectual opportunities and the professional needs of a discipline experiencing fundamental change. Recognizing the importance of certain kinds of traditional work, as well as the challenge of a number of recent developments, the program is based on a commitment to:

- (1) Ground its teaching and research in a continuing process of self-scrutiny, by serious engagement with the theoretical and critical debates of the time
- (2) Understand literary texts as historical productions, with the corollary that "high" literature may be read in conjunction with texts traditionally seen as marginal or as not "literary" at all (popular literature, texts by women and minorities, film, discursive writing, student writing, etc.)
- (3) Bring together areas of scholarly inquiry which, for largely institutional reasons, have been kept apart: primarily, composition research and pedagogy dealing with the social constitution of writing, literary and intellectual history, and theoretical inquiry into the power of language and its relationship to social order and social change

The following requirements specific to English should be read in conjunction with the general PhD requirements for all FAS students. (See *Requirements for the PhD Degree* on page 40 and *Regulations Pertaining to Doctoral Degrees* on page 23.)

PHD CREDIT REQUIREMENTS

For the PhD, the student must earn at least 48 credits in addition to those earned for the MA. These must include at least 24 credits in course work and six credits in dissertation research. The remaining 18 credits may be earned either in course work or in dissertation research. Several seminars each year will be held specifically for advanced students. A PhD candidate may not include courses from the 1000 series. The student's advisor may approve courses in other departments if such courses will strengthen the student's program.

All PhD students are required to teach for at least two terms and to complete successfully the teaching seminar (2510).

FOREIGN LANGUAGE REQUIREMENT

The department requires reading knowledge of two foreign languages or comprehensive command of one language. The language requirement passed at the MA level will partially satisfy the PhD language requirement. Any language relevant to the student's project or, more generally, to the anticipated conditions of future scholarship and teaching may fulfill this requirement. This requirement will be fulfilled by examinations administered by faculty of University language departments or in consultation with members of language departments at other institutions.

A student may substitute for the comprehensive command examination a graduate course in a language department (when taught in the language in question) passed at the A or B level. Under certain circumstances, language examinations passed at other graduate schools may be applied toward fulfillment of this requirement. Tools of research other than languages (such as proficiency in computer science) may be substituted for a second language subject to departmental approval.

EXAMINATION REQUIREMENTS

As part of learning to initiate a serious critical project, each doctoral student, in conjunction with an exam committee, should define the program of study and readings on which he or she would be tested. Work on the exams might well lead fairly directly into the dissertation, but it should not be considered as simply a first attempt at that task. Rather, it should be a broader investigation of topics and issues that might then be the subject of a more detailed written inquiry. Preparation for the exams might well include course work/readings in other disciplines and genealogical research on the topic as well as the traditional literary historical studies.

The critical project may include composition or film. The department offers an optional minor in composition.

COURSE LISTINGS

Undergraduate courses numbered in the 1000 series sometimes may be taken for graduate credit by master's students, but only within the limits listed previously. English departmental undergraduate courses at this level are separated into two distinct series, one for literature and language, the other for writing. Descriptions of these courses are available in the *Course Descriptions*, which is published just before registration each term.

A variety of undergraduate courses is offered in each of the following categories each term: introductory literature courses, theories of literature and culture, British literature, American literature, fantasy, myth, folktale, international Modernism/Postmodernism, film, language, genre, mode, specialized textual practices, gender, race, class, nation, popular culture, theme and interdisciplinary, Senior Seminar, and English writing.

Graduate courses, numbered 2000 and higher, vary greatly from term to term. The following list includes all seminars offered in recent years. In the average term, a dozen or more courses or seminars in literature and in writing are available, as well as one or two teaching seminars. Students should consult the *Schedule of Classes* and the *Course Descriptions* published prior to the term for which they are registering.

ENGLISH LITERATURE

ENGLIT	2010	Introduction to Modern Critical Practice
ENGLIT	2011	Issues in Cultural Studies
ENGLIT	2012	Introduction to Critical/Cultural Study

ENGLIT	2013	Criticism in Society
ENGLIT	2017	Reader-Response Criticism
ENGLIT	2018	Reception Theories
ENGLIT	2020	Ideology and Criticism
ENGLIT	2021	History and Spectacle
ENGLIT	2022	Post Structuralism
ENGLIT	2027	Roland Barthes and Cultural Criticism
ENGLIT	2028	History and Philosophy of Economics
ENGLIT	2029	Readings in Critical Theory
ENGLIT	2031	Gender in Literature
ENGLIT	2032	Gender and Discourse
ENGLIT	2033	Feminist Theory
ENGLIT	2034	Women and Literacy
ENGLIT	2035	Black Literary Criticism and Theory
ENGLIT	2040	Institutions of Literature
ENGLIT	2043	Theory of Popular Culture
ENGLIT	2045	Philosophy of Science in the Humanities
ENGLIT	2052	Defoe and Swift
ENGLIT	2053	Metaphor and Critical Theory
ENGLIT	2105	Middle English Literature
ENGLIT	2106	Medieval Literature and Culture
ENGLIT	2107	Society and Dissent in Early English Literature
ENGLIT	2108	Arthurian Literature
ENGLIT	2109	Epic Background
ENGLIT	2110	History and Representation
ENGLIT	2115	Chaucer
ENGLIT	2118	Allegory and Iconography
ENGLIT	2120	Early Modern London
ENGLIT	2125	English Renaissance
ENGLIT	2126	Shakespeare
ENGLIT	2127	Shakespeare, Cinema and Society
ENGLIT	2128	Renaissance Discourses of Gender
ENGLIT	2132	Elizabethan and Jacobean Drama
ENGLIT	2133	17th-century Poetry
ENGLIT	2140	Milton
ENGLIT	2143	Debauched Puritan
ENGLIT	2150	Restoration and the 18th Century
ENGLIT	2151	18th-century British Social Theory
ENGLIT	2154	Social Theory 18th-century Novel
ENGLIT	2155	Sensibility
ENGLIT	2156	The Culture of Advice
ENGLIT	2160	Blake
ENGLIT	2170	British Romantics
ENGLIT	2175	Victorian Women Novelists
ENGLIT	2176	19th-century British Novel
ENGLIT	2177	Dickens
ENGLIT	2178	The Victorian Age and After
ENGLIT	2190	1890s Represent Fin De Siecle
ENGLIT	2202	Conceptualizing Traditions
ENGLIT	2205	Reconstructing American Literature

ENGLIT 2208	Culture of American Literacy	ENGLIT 2480	Film Directors
ENGLIT 2210	American Renaissance	ENGLIT 2510	Seminar in Teaching Composition
ENGLIT 2211	“Scribbling Women”/Classic American Authors	ENGLIT 2511	Seminar in Teaching English
ENGLIT 2213	American Transcendental Theory of Language	ENGLIT 2514	Seminar in Teaching Basic Writing
ENGLIT 2215	Literature and Culture of the South	ENGLIT 2516	Professionalism and the American University
ENGLIT 2221	Literature of Reform 1820-1890	ENGLIT 2518	Western PA Writing Project Summer Institute for Teachers
ENGLIT 2223	Literature and Hegemony	ENGLIT 2519	Writing and Agitations of Power
ENGLIT 2230	Anglo-American Cultural Exchange	ENGLIT 2520	Writing As Teachers
ENGLIT 2231	Blood, Class and Nostalgia	ENGLIT 2525	Composition Studies
ENGLIT 2235	Periodicals and the Public	ENGLIT 2529	Designing Fiction for Teaching Composition
ENGLIT 2243	New World Slave Narratives	ENGLIT 2531	Sequencing
ENGLIT 2245	Black Literature	ENGLIT 2533	Advanced Research in Composition
ENGLIT 2246	Literary Images: Afro-American Artists	ENGLIT 2535	Formative/Summative Evaluation of Writing
ENGLIT 2247	African-American Autobiography	ENGLIT 2538	Literature and Instruction
ENGLIT 2248	Abolitionist Discourse	ENGLIT 2539	Broken English
ENGLIT 2250	20th-century American Literature	ENGLIT 2540	Writing and Difference
ENGLIT 2251	U.S. Culture 1929-1973	ENGLIT 2541	WPWP Advanced Institute
ENGLIT 2255	American Drama	ENGLIT 2565	Producing Books, Producing Subjects
ENGLIT 2256	Dramatizing American Women	ENGLIT 2566	Figuring Writing
ENGLIT 2257	Disciplining American Drama	ENGLIT 2567	Practices and Texts
ENGLIT 2280	Contemporary American Novel	ENGLIT 2568	Stylistics: Composing Sentences
ENGLIT 2282	History of American Film 1	ENGLIT 2581	Materials and Methods
ENGLIT 2285	Race and Gender in 20th-century Poetry	ENGLIT 2584	Proseminar 1
ENGLIT 2320	The Avant-Garde	ENGLIT 2585	Proseminar 2
ENGLIT 2325	Modernism	ENGLIT 2589	Topics in English Studies
ENGLIT 2326	Modern Poetry	ENGLIT 2590	Project Research Seminar
ENGLIT 2329	Contemporary Novel	ENGLIT 2601	Comedy
ENGLIT 2350	Postmodernism	ENGLIT 2602	Tragedy
ENGLIT 2382	Irish Literary Revival	ENGLIT 2603	Satire
ENGLIT 2385	Post-colonial Discourse and Cultural Critique	ENGLIT 2604	From Heroic to Mock Heroic
ENGLIT 2387	Imperialism and Modernity	ENGLIT 2609	Melodrama
ENGLIT 2388	Third World Feminisms	ENGLIT 2610	The Novel: Texts and Theory
ENGLIT 2389	Third World Literature	ENGLIT 2611	The Self as Child
ENGLIT 2390	History of Colonialism 1492-Present	ENGLIT 2612	Fascism and Euro-American Literature
ENGLIT 2391	Women Writers from Africa and the Diaspora	ENGLIT 2615	Imperialism and Childhood
ENGLIT 2392	Literature of Slavery	ENGLIT 2621	Seminar: Shaw
ENGLIT 2393	African Narratives	ENGLIT 2622	Seminar in Ibsen
ENGLIT 2394	Diaspora and Transnational Identity	ENGLIT 2641	Memory, Narrative, Nostalgia
ENGLIT 2451	Film History/Theory	ENGLIT 2648	Misrecognition of Innocence
ENGLIT 2460	Film and Literature	ENGLIT 2700	Seminar in Rhetoric and Literacy
ENGLIT 2461	Genre and Film	ENGLIT 2900	Museum Internship–Film Video 1
ENGLIT 2462	Comic Theory and the Cinema	ENGLIT 2901	Museum Internship–Film Video 2
ENGLIT 2463	Cinema and Nation	ENGLIT 2970	Teaching of English
ENGLIT 2464	Masculinity in Cinema	ENGLIT 2990	Independent Study
ENGLIT 2465	Cinema, Comedy and Society	ENGLIT 3000	Research and Dissertation for the PhD Degree
ENGLIT 2466	Film and Modernism	ENGLIT 3010	Dissertation Workshop
ENGLIT 2470	Women and Film	ENGLIT 3018	Theories of Reception
ENGLIT 2471	Maternal Discourse in Film/Literature	ENGLIT 3101	Discourse of Primitivism
ENGLIT 2472	Black Images in American Cinema	ENGLIT 3103	Literature of Slavery
ENGLIT 2477	Classical Hollywood Cinema		

ENGLIT	3104	Made in U.S.A.: American French Culture, 1945-1968
ENGLIT	3113	Pre-Enlightenment Criticism
ENGLIT	3120	Marx
ENGLIT	3121	Marxist Literary Criticism
ENGLIT	3125	Derrida
ENGLIT	3126	Walter Benjamin
ENGLIT	3128	Historical Discourses of Gender
ENGLIT	3130	Interrogating Canonicity
ENGLIT	3141	Intellectuals
ENGLIT	3143	Critique of Humanism
ENGLIT	3145	Theory and Emergent Subjects
ENGLIT	3150	Literacy and Pedagogy
ENGLIT	3155	History of Rhetoric
ENGLIT	3160	Film Theory/Literary Theory
ENGLIT	3161	Cinema and Desire
ENGLIT	3165	Theories of National Cinema
ENGLIT	3167	Nationalism and Sexual Politics
ENGLIT	3169	Topics in 19th-century Culture
ENGLIT	3205	Henry Adams
ENGLIT	3300	Composition: History, Theory and Practice
ENGLIT	3461	Genre and Film Melodrama
ENGLIT	3475	The Body in the Cinema
ENGLIT	3589	Advanced Topics in English Studies
ENGLIT	3902	Directed Study for PhD Student

ENGLISH WRITING

ENGWRT	2010	Fiction Workshop
ENGWRT	2080	Graduate Playwriting
ENGWRT	2092	Writer's Journals
ENGWRT	2094	Readings in Contemporary Fiction
ENGWRT	2095	Topics in Fiction
ENGWRT	2210	Poetry Workshop
ENGWRT	2290	Readings in Contemporary Poetry
ENGWRT	2291	Underground and Avant-Garde
ENGWRT	2292	Contemporary Poetry in Translation
ENGWRT	2293	Topics in Poetry
ENGWRT	2310	Non-Fiction Workshop
ENGWRT	2390	Readings in Contemporary Non-Fiction
ENGWRT	2392	Documentary Film Writing
ENGWRT	2400	Topics in Non-Fiction: Magazine
ENGWRT	2401	Topics in Non-Fiction: Electronic Media
ENGWRT	2402	Topics in Non-Fiction: Newspaper
ENGWRT	2970	Teaching of English
ENGWRT	2990	Independent Study
ENGWRT	3009	Directed Study

FILM STUDIES

The Film Studies Program was established at the University of Pittsburgh in the early 1970s in response to cinema's growing influence as a vital academic field. The focus of the program has been one of critical studies—the examination of cinema as a major art form and cultural force of the 20th century. From its inception, the Film Studies curriculum was formulated on an interdisciplinary model—drawing upon faculty expertise in such areas as literature, fine arts, social science, and foreign cultures. This approach is appropriate for a medium that circulates internationally (within a complex socio-economic context), and merges both visual and verbal discourses. Because of the program's vigorous interdisciplinary focus, it has built strength in several broad areas: (a) the consideration of crucial themes and theoretical issues that have come to dominate the Film Studies field; (b) the examination of issues related to film genre; and (c) the investigation of questions of national cinema and film and politics.

Graduate certificate programs in Film Studies were established in 1997 at both the master's and doctoral levels. The certificate programs address the needs of both the student who will focus on Film Studies (for example, in a dissertation or master's thesis) and the student who wishes training in Film Studies as a sub-specialty (while concentrating on another academic area). The courses and research paper delineated in the certificate requirements provide the student with a coherent program in Film Studies appropriate to his/her level of graduate study. For course offerings and advising, the graduate certificate programs draw upon faculty from various FAS departments, including Communication, History of Art and Architecture, East Asian, English, German, Hispanic, and Slavic.

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 Web site: <http://www.pitt.edu/~filmst/>

Affiliated Faculty: BEVERLEY (Hispanic Languages and Literatures), BREIGHT (English), CLARK (Communication), CONDEE (Slavic Languages and Literatures), FEUER (English), FISCHER (English), HAKE (Germanic Languages and Literatures), JUDSON (History of Art and Architecture/Carnegie Museum of Art), LANDY (English), LOWENSTEIN (English), LU (East Asian Languages and Literatures), LUCKETT (English), MacCABE (English), McDONALD (East Asian Languages and Literatures), PADUNOV (Slavic Languages and Literatures), SHEON (History of Art and Architecture), STABILE (Communication), WATTS (French and Italian Languages and Literatures)

RESEARCH

The University of Pittsburgh's Graduate Faculty in Film Studies is highly published and has a strong national reputation. Most faculty members have written several books and numerous articles in scholarly journals. Most are regular participants in the national and international academic conference and lecture circuit. As evidence of its dynamic status in the field, the University has twice hosted the annual conference of the Society for Cinema Studies—the major academic organization in the discipline. Furthermore, several faculty have held prominent

offices within the organization (president, vice-president, treasurer, executive council members, etc.). Others are renowned for organizing national and international conferences, symposia, and film exhibition events. Many serve on the editorial boards of established journals and university presses.

FACILITIES

Film Studies classes are taught in a variety of easily accessible, media-equipped classrooms on the University campus (David Lawrence Hall, Posvar Hall, Cathedral of Learning). Such rooms provide 16mm projection, videotape and laserdisk projection, 35mm slide projection, audiotape amplification, computer graphics, etc.

Hillman Library has an excellent collection of scholarly books and journals in the area of film studies. In addition, it houses a media center with a large collection of films, videotapes and videodisks that are available for viewing on the premises. The Film Studies Program also has a media room in the Cathedral of Learning that graduate students may use to view videotapes/disks for research or teaching. The media room also houses additional equipment (for example—computer, color scanner, tri-standard video player, slide projector, etc.).

RELATED ACTIVITIES

The Film Studies Program sponsors (or cosponsors with other programs and departments) a series of lectures by scholars and visits by filmmakers during the course of the academic year. The program also sponsors the Pittsburgh Film Colloquium (run by graduate students) which organizes monthly film events in the broader Pittsburgh film community. Furthermore, many graduate students lead discussions of film with undergraduates as part of the Pitt Arts program.

ADMISSIONS

All students who wish to enroll in the graduate certificate programs in Film Studies (master's or PhD) must be matriculated for a graduate degree (master's or PhD) in a department of the **Faculty of Arts and Sciences** or in another school within the University. The certificates are awarded in conjunction with a degree through a University of Pittsburgh *department*. (Film Studies is a *program*.)

ELIGIBILITY FOR MASTER'S CERTIFICATE

Students engaged in a master's program at the University can enroll in the Film Studies master's certificate program at any point in the course of their study by filing the proper form with the Film Studies Program Director.

ELIGIBILITY FOR DOCTORAL CERTIFICATE

Students engaged in a doctoral program at the University can enroll in the Film Studies doctoral certificate program at any point in the course of their study by filing the proper form with the Film Studies Program Director. The doctoral certificate is awarded only after the completion of all degree requirements for the PhD in the student's home department, school, or program.

FINANCIAL ASSISTANCE

There is no financial aid available specifically for the graduate Film Studies certificate programs. However, graduate students who enroll for the certificate program can apply for financial aid from their home department (that is, the department in which they will receive a master's

or doctoral degree). Such aid typically takes the form of scholarships, fellowships, teaching assistantships and/or graduate student assistantships.

ADVISING/OVERSIGHT

The Film Studies Program Director will advise students and keep records. A Graduate Steering Committee will deal with ongoing curricular and administrative issues and evaluate special students.

REQUIREMENTS FOR THE MASTER'S CERTIFICATE

The master's certificate requires 12 credits of course work and a research paper as detailed below:

COURSE WORK

Four Film Studies courses (12 credits) including:

- Core Course: Film History/Theory (ENGLIT 2451);
- Three Electives: at least one outside the student's home department; representing at least two areas of study (for example—national cinema, theory/themes, genre, etc.)

RESEARCH PAPER

The certificate requires the student to write a research paper in the field of film studies (approximately 25-30 pages) to be evaluated by a three-person committee comprised of Film Studies Program faculty appointed by the Director (including at least one person in, and one person outside of the student's home department). The paper should be developed from a course paper or from a section of the student's master's thesis (if one is required by the home department). If the student has worked with a Film Studies faculty member on an earlier version of the paper, that faculty member should be on the committee. Guidelines will be provided for the research paper and it is advised that students discuss this requirement with an advisor or the Program Director well in advance of submission.

ADDITIONAL CONDITIONS

- Only one directed study course (supervised by a Film Studies faculty) may be counted toward the certificate.
- All courses must be passed with a "B" or higher.
- The Museum Internship (ENGLIT 2900-2901) is not applicable to the master's certificate.
- Students should notify the Program Director of their intention to file for graduation at the beginning of their final term.

REQUIREMENTS FOR THE DOCTORAL CERTIFICATE

The doctoral certificate requires 18 credits of course work and a research paper as detailed below:

COURSE WORK

Six Film Studies courses (18 credits) must be taken, including:

- Core Course: Film History/Theory (ENGLIT 2451)
- Five Electives: at least two outside the student's home department representing at least two areas of study (for example—national cinema, theory/themes, genre, etc.)

RESEARCH PAPER

The certificate requires a research paper in the field of Film Studies (approximately 25-30 pages in length) to be evaluated by a three-person committee comprised of Film Studies faculty appointed by the Program Director (including at least one person in and one person outside the student's home department). The paper should be developed from a course paper or from a section of the student's master's thesis (if one is required by the home department). If the student has worked with a Film Studies faculty member on an earlier version of the paper, that faculty member should be on the committee. Guidelines will be provided for the research paper and it is advised that students discuss this requirement with an advisor or the Program Director well in advance of submission.

ADDITIONAL CONDITIONS

- Only two directed study courses (supervised by Film Studies faculty) can be counted toward the certificate.
- All courses must be passed with a "B" or higher.
- Only three credits of the Museum Internship (ENGLIT 2900-2901—six credits) can count toward the certificate.
- Students should notify the Program Director of their intention to file for graduation at the beginning of their final term.

TRANSFER CREDITS

Whether students who have transferred from another institution would be given credits in general (toward their University of Pittsburgh degree) would be decided by FAS Graduate Studies, Student Services (322 Thackeray Hall) and/or the department in which they were enrolled.

Whether such credits (if granted) would be counted toward the Film Studies certificates would be determined, on a case-by-case basis, by the Film Studies Graduate Steering Committee. For the master's certificate, no more than six (out of 12) credits could be transferred. For the doctoral certificate, no more than nine (out of 18) could be transferred.

COURSE LISTINGS

NOTE: The following list does not take account of courses that might be developed in the future.

CORE COURSE**■ English Literature**

ENGLIT 2451 Film History and Theory

ELECTIVE COURSES**■ Chinese**

CHIN 2065 Sources on East Asia: Chinese New Wave Cinema

■ Rhetoric and Communication

COMMRC 2226 Media and Cultural Studies
 COMMRC 2227 Media Theories: Feminist Media Studies
 COMMRC 2227 Media Theories: Postmodernism
 COMMRC 2227 Media Theories: Reading Television
 COMMRC 2229 Media and Global Cultures

COMMRC 3325 Seminar in Mass Communication
 COMMRC 3326 Seminar in Media Studies: Barthes, De Certeau, and Bourdieu

■ English Literature

ENGLIT 2021 History and Spectacle
 ENGLIT 2043 Theory of Popular Culture: Sexuality and Representation in Fiction Film
 ENGLIT 2127 Shakespeare, Cinema and Society
 ENGLIT 2282 History of American Film 1
 ENGLIT 2460 Film and Literature
 ENGLIT 2461 Genre and Film
 ENGLIT 2463 Cinema and Nation
 ENGLIT 2464 Masculinity in Cinema
 ENGLIT 2465 Cinema, Comedy and Society
 ENGLIT 2466 Film and Modernism
 ENGLIT 2470 Women and Film
 ENGLIT 2471 Maternal Discourse in Film and Literature
 ENGLIT 2472 Black Images in American Cinema
 ENGLIT 2477 Classical Hollywood Cinema
 ENGLIT 2480 Film Directors: Pasolini
 ENGLIT 2589 Topics in English Studies: The Star, Performance and Fan Culture
 ENGLIT 2609 Melodrama
 ENGLIT 2882 History of American Film
 ENGLIT 2900 Museum Internship—Film/Video 1
 ENGLIT 2901 Museum Internship—Film/Video 2
 ENGLIT 3104 Made in USA: America in French Culture, 1945-68
 ENGLIT 3160 Film Theory/Literary Theory
 ENGLIT 3161 Cinema and Desire
 ENGLIT 3162 Authorship in Cinema
 ENGLIT 3165 Theories of National Cinema
 ENGLIT 3461 Genre and Film Melodrama
 ENGLIT 3475 The Body in Cinema

■ German

GER 2882 Topics in German Cinema
 GER 2884 Weimar Cinema
 GER 2886 Film in the Third Reich

■ Spanish

SPAN 2452 Contemporary Latin American Film
 SPAN 2580 Contemporary Hispanic Film

■ Russian

RUSS 2453 Thaw and Perestroika
 RUSS 2640 Russian Film: Lumiere to Lenin
 RUSS 2640 Post-Stalinist Russian Cinema

FRENCH AND ITALIAN LANGUAGES AND LITERATURES

The French and Italian Languages and Literatures Department offers programs leading to the MA degree in French or Italian and to the PhD degree in French. Recent innovations in the curriculum allow students in French to take courses in the following thematic clusters: politics and literature, Romance languages and literatures, and literature and the arts. See the graduate advisor and/or the Web site for full details on these concentrations. The department offers two certification programs in K-12 foreign language pedagogy in association with the **School of Education**: a traditional MA in French or Italian with certification to teach foreign languages K-12; and an innovative program in the teaching of language, literature, and culture. In addition, the department encourages students to participate in various interdisciplinary programs, such as Medieval and Renaissance Studies, Cultural Studies, Women's Studies, and Film Studies, where students may work toward a graduate certificate in conjunction with their degree.

CONTACT INFORMATION

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ADMISSIONS

In general, students accepted into the graduate program must meet the following criteria:

- They should have completed an undergraduate major (or equivalent) in the language and literature they propose to study at the graduate level.
- They must be able to enroll in courses that are taught entirely in French and/or Italian. This presupposes a high level of skill in speaking, reading, and writing in their major language.
- Students applying for the graduate program in French must present scores from the general sections of the Graduate Record Examination.
- It is recommended that incoming students have a reading knowledge of a second Romance language or of Latin.

FINANCIAL ASSISTANCE

A limited number of teaching assistantships and fellowships are available to qualified students. Students interested in these awards should apply in writing to the department. For information concerning the Andrew Mellon Predoctoral Fellowships and Provost's Fellowships in the Humanities, students should contact Graduate Studies, Student Services in 322 Thackeray Hall. *See also Fellowships and Traineeships on page 36.*

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS

Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with department-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER OF ARTS IN FRENCH

A minimum of eight one-term courses is required, of which at least six must be 2000-level courses.

Candidates for the MA with a major in French must demonstrate the ability to read either a Romance language other than their major one or Latin or German by taking the appropriate department reading exam or by completing with a grade of B or better the second term of a course specifically designed as a reading course (for example, Spanish 0008).

Students must also pass comprehensive examinations and fulfill the following additional requirements:

■ Seminar Paper

Two faculty members must approve the paper, written in French in a course specifically designed as a seminar.

■ Literary Theory

Students must take FR 2710 (Introduction to the Study of Literature) or the equivalent and pass it with a grade of B or better.

■ Language Proficiency in French

Students whose native language is not French may meet this requirement by passing a proficiency examination during the first year of residence.

NOTE: Students should also consult the department's *Graduate Policy Statement* for information on comprehensive examinations and other departmental regulations.

SPECIALIZATION IN FRENCH LINGUISTICS AND LITERATURE

Students pursuing the MA in French who would like to specialize in French Linguistics and Literature must complete the following requirements:

■ Course Work

A minimum of 10 one-term courses is required, of which at least eight must be 2000-level courses. These courses will be distributed in the following manner:

Linguistics Courses (six courses)

- a) FR 2970 Teaching of French
- b) FR 2100 Readings in Old, Middle, and Early Modern French
- c) One course or one directed study in two of the three following areas:
 - 1) Diachronic linguistics (FR 2801 History of the French Language)
 - 2) Synchronic linguistics (FR 1038 Structure of Modern French)
 - 3) Applied linguistics (FR 2972 Foreign Language Education: Theory and Practice or FR 2973 Issues in Teaching/Learning Foreign Language)
- d) Two courses in the Department of Linguistics (The choice of these two courses must be made in consultation with the student's advisor.)

Literature Courses (four courses)

- a) FR 2710 Introduction to the Study of Literature
- b) Three courses or seminars in French literature taken in different periods

NOTE: Students must have taken LING 1950 (Introduction to Linguistics) or the equivalent before the end of their first year in the program, but this course does not count toward the completion of the MA.

Other Requirements

Candidates for the MA with specialization in French Linguistics and Literature must also pass comprehensive examinations and fulfill the following additional requirements:

1) Seminar Paper

This paper, written in French, in a course specifically designated as a seminar (for literature) or directed study (for linguistics), must be approved by two faculty members.

2) Proficiency in Written French

Students whose native language is not French will meet this requirement by passing an examination during the first weeks of their residence.

3) Second Language

Students must demonstrate a basic knowledge of Latin, defined as one year of college-level instruction or the equivalent. It is recommended that this requirement be fulfilled during, or prior to, the term in which the candidate chooses to take FR 2801.

Examinations

Candidates are required to take a written comprehensive examination composed of the following four two-hour sections:

- 1 & 2) One examination in two of the following areas: diachronic linguistics, synchronic linguistics, applied linguistics
- 3) One cross-century examination in French literature
- 4) One examination on one period of French literature to be chosen by the candidate

Reading lists may be obtained from the departmental office.

REQUIREMENTS FOR MASTER OF ARTS IN ITALIAN

A minimum of eight one-term courses in Italian Literature and Culture is required, of which at least seven must be 2000-level courses. Occasionally, an Italian-taught upper-level undergraduate course may be taken, but only one such course may count towards the degree. Italian 2710 (Introduction to the Study of Literature) and Italian 2801 (History of the Italian Language) are required for all students. Directed and Independent Studies in Italian are offered upon request; such courses may be taken in addition to, but not as a substitution for, regularly scheduled graduate courses, and only one may count towards the degree. MA candidates must also pass the comprehensive examinations and fulfill the following additional requirements:

Seminar Paper

Two faculty members must approve this paper, written in Italian.

Reading Requirement

Candidates for the MA with a major in Italian must demonstrate the ability to read either a Romance language other than their major one or Latin or German by passing a reading exam prepared by the appropriate department or by completing with a grade of B or better

the second term of a course specifically designed as a reading course (for example, Spanish 0008).

Language Proficiency

Entering students in Italian must demonstrate oral and written proficiency in the Italian language unless they have the *laurea* from an Italian university.

REQUIREMENTS FOR THE PhD DEGREE

Before students may be considered for admission to candidacy for the PhD in French they must complete successfully a minimum of eight 2000-level courses (24 credits) beyond the MA. The course work must include:

- One course in French linguistics. FR 2801 (History of the French Language) is strongly recommended.
- FR 2100 (Readings in Old, Middle, and Early Modern French) if this course or an equivalent has not been taken at the MA level; the requirement may also be met by taking and passing the final examination for the course.
- Three seminars in which the student writes seminar papers. One seminar paper must be written in English and at least one of the other two papers must be in French. See *Graduate Policy Statement* for a definition of “seminar.”
- Four other courses. Some of these will typically, with the advisor’s consent, be taken in other departments.

ADMISSION TO CANDIDACY

The following requirements specific to the department should be read in conjunction with the general PhD requirements for all FAS students. (See *Requirements for the PhD Degree on page 40 and Regulations Pertaining to Doctoral Degrees on page 23.*) Doctoral students will write and defend a dissertation.

The courses that candidates take represent only part of their total preparation for the PhD. Before admission to formal candidacy for the degree, they must meet the following requirements:

Preliminary Evaluation

In accordance with graduate school policy, students in a PhD program must undergo a preliminary evaluation by the end of the first year of full residence. The purpose of this evaluation is to identify those students who may be expected to complete a doctoral program successfully, and also to identify deficiencies in the students’ preparation. To satisfy this requirement, graduate students in French will meet with the graduate advisor during the second term of residence for an evaluation of the record of performance in the first term on the basis of grades and reports from the students’ instructors. They will also submit a five-page document presenting their future dissertation topic.

Reading Requirement

Candidates for the PhD in French must give evidence of ability to read German or Latin or a Romance language other than their major language and one additional language to be chosen according to the candidates’ interests and needs and in consultation with their advisors.

Oral Examination

Candidates for the PhD must present an oral *explication de texte* before a faculty committee.

■ **Comprehensive Examinations**

Candidates will pass comprehensive examinations as described in the departmental *Graduate Policy Statement*.

Upon successful completion of these requirements, each student must present to the prospective doctoral committee a brief prospectus describing the subject on which the candidate proposes to write the doctoral dissertation. Students should then, in consultation with the dissertation director, file an application for admission to candidacy for the PhD degree. When the topic has been accepted and the Department Chair and the Assistant Dean of Graduate Studies have approved the proposed committee, the student will be informed of admission to candidacy.

■ **Teaching Requirement**

All candidates for the PhD are normally expected to do some teaching as part of their professional preparation.

COURSE LISTINGS

The following courses carry graduate credit within the limits established in the various programs.

FRENCH

FR	1001	Poetry
FR	1002	French Theater
FR	1003	Novel 1: The Novel to Flaubert
FR	1004	Novel 2: Flaubert and the Modern Novel
FR	1010	Medieval and Renaissance Topics
FR	1012	17th-century Topics
FR	1014	18th-century Topics
FR	1016	19th-century Topics
FR	1018	20th-century Topics
FR	1038	Structure of Modern French
FR	1039	Applied Linguistics: French for Teachers
FR	1040	French Language Past and Present
FR	1050	French Civilization 1
FR	1051	French Civilization 2
FR	1052-59	French Civilization: Special Topics
FR	2100	Readings in Old, Middle, and Early Modern French
FR	2101	Medieval French Literature
FR	2105	Seminar: Medieval Topic
FR	2106	Seminar: Christine De Pizan
FR	2200	Renaissance Poetry
FR	2201	Renaissance Prose
FR	2202	Rabelais and His Times
FR	2203	Seminar: Montaigne
FR	2215	Renaissance Humanism
FR	2225	Seminar: 16th-century Topic
FR	2300	17th-century Literature: General Topic
FR	2301	French Classicism
FR	2305	Seminar: 17th-century Topic
FR	2306	Seminar: Racine
FR	2310	The Invention of Modernity

FR	2400	18th-century Literature: General Topic
FR	2401	18th-century Literature 2
FR	2402	Topics in 17th- and 18th-Century French Culture
FR	2403	Les Philosophes
FR	2405	Seminar: 18th-century Topic
FR	2406	Seminar: Rousseau
FR	2408	18th-century Republic of Letters
FR	2410	Texts and Ideals of Revolution
FR	2415	The Novels of the Enlightenment
FR	2416	Shattered Masters: Novels for a Godless World
FR	2500	19th-century Literature: General Topic
FR	2501	Paris, Prose and Politics: 19th-century France
FR	2502	Seminar: Flaubert
FR	2505	Seminar: 19th-century Topic
FR	2510	French Romanticism
FR	2600	20th-century Literature: General Topic
FR	2601	French Literature: WWI-WWII
FR	2602	Literature and World War II
FR	2605	Seminar: 20th-century General Topic
FR	2606	Seminar: Genet
FR	2607	Seminar: Celine
FR	2703	Seminars on Area Topics, Genres, Themes
FR	2704	Advanced Readings in Literary Theory
FR	2705	French Intellectuals Past and Present
FR	2710	Introduction to the Study of Literature
FR	2750	Literature and Politics
FR	2760	Literature and the Arts
FR	2801	History of the French Language
FR	2802	Introduction to Old Provençal
FR	2803	Seminar: Problems in Synchronic French Linguistics
FR	2804	Seminar: Problems in Diachronic French Linguistics
FR	2810	Comparative Romance Linguistics 1
FR	2811	Comparative Romance Linguistics 2
FR	2902	Directed Study
FR	2910	Comprehensive Examination MA
FR	2970	Teaching of French
FR	2972	Foreign Language Education: Theory and Practice
FR	2973	Issues in Teaching/Learning Foreign Language
FR	2990	Independent Study
FR	3000	Research and Dissertation for the PhD Degree
FR	3902	Directed Study
FR	3905	Teaching Apprenticeship
FR	3910	Comprehensive Examination PhD

ITALIAN

ITAL	1060	Special Topics
ITAL	1061	Dante 1
ITAL	1062	Dante 2

ITAL	1063	Petrarch and Boccaccio
ITAL	1064	Novel
ITAL	1065	Lyric Poetry
ITAL	1066	Epic Poetry
ITAL	1067	Italian Theater
ITAL	1068	Italian Novella
ITAL	2100	Duecento
ITAL	2200	Dante
ITAL	2201	Trecento
ITAL	2202	Petrarch: Poet and Humanist
ITAL	2203	Boccaccio and the World of Trecento
ITAL	2300	Quattrocento, Cinquecento
ITAL	2301	Novella
ITAL	2302	Theater of the Renaissance
ITAL	2305	Tasso
ITAL	2310	Boiardo and Renaissance in Ferrara
ITAL	2315	Renaissance Humanism
ITAL	2320	Ariosto and Vernacular Classicism
ITAL	2400	Seicento
ITAL	2408	18th-century Republic of Letters
ITAL	2410	Settecento
ITAL	2420	Goldoni
ITAL	2500	Ottocento 1
ITAL	2501	Ottocento 2
ITAL	2510	Leopardi
ITAL	2511	Manzoni
ITAL	2512	Verga
ITAL	2513	Foscolo
ITAL	2600	Novecento 1
ITAL	2601	Novecento 2
ITAL	2700	Literary Criticism
ITAL	2701	Special Topics
ITAL	2710	Introduction to the Study of Literature
ITAL	2750	Scientific Discourse in Italian Literature
ITAL	2800	Comparative Romance Linguistics 1
ITAL	2801	History of the Italian Language
ITAL	2802	Stylistics
ITAL	2810	Comparative Romance Linguistics 2
ITAL	2902	Directed Study for the MA
ITAL	2910	Comprehensive Examination MA
ITAL	2970	Teaching of Italian
ITAL	2990	Independent Study

GEOLOGY AND PLANETARY SCIENCE

The Geology and Planetary Science Department offers degree programs that lead to the MS or PhD in Geology and Planetary Science. The PhD program is designed to educate scientists for basic or applied research and teaching. Graduate research may involve specialization in geology, geochemistry, geophysics, planetary science, and environmental science.

CONTACT INFORMATION

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RESEARCH

The Department of Geology and Planetary Science at the University of Pittsburgh has an active and broadly based research faculty, and offers programs that encompass many fields of current interest in geology, coastal geology, geochemistry, geophysics, paleoecology, and planetary science. A wide variety of approaches are used, combining traditional field-based studies with computational tools such as remote sensing image analysis and geographic information systems (GIS). Much of the research is multidisciplinary, and collaboration with scientists in other departments of the University, as well as with other universities and government laboratories, is common. Federally funded departmental research programs that receive international recognition include: the study of planetary surfaces and processes, especially on Mercury, Mars, and Venus; paleomagnetism and plate tectonics; meteoritics; geological image processing and analysis; and isotope geochemistry.

FACILITIES

The Planetary Geology Group in the Department of Geology and Planetary Science includes the following facilities:

PLANETARY SCIENCE LABORATORIES

The Planetary Surfaces Laboratory contains UV, visible, and IR spectrometers and a goniometric photopolarimeter for characterization of the spectral reflectance of planetary surface materials, as well as a high vacuum system for simulating conditions on the surfaces of airless bodies and a H-ion gun for simulating space weathering by solar wind radiation damage in regoliths.

The Planetary Geosciences Laboratory (PGL) contains computer facilities, a collection of planetary geology datasets, and resources for map production and image analysis (for example—light tables, stereoscopes, and drafting equipment). The PGL contains an extensive collection of remote sensing data, including NASA CD-ROMs of Clementine, Galileo, Magellan, Viking, Voyager, GRSFE (Geologic Remote Sensing Field Experiment), and Volcanology (Kilauea, Mauna Loa, and Kamchatka) data; a print collection of Lunar Orbiter and Viking Lander images; selected prints of Viking Orbiter images and mosaics, Voyager images and mosaics, and Mariner 10 mosaics of Mercury and aerial photographs; and LANDSAT data of volcanic landforms in the western U.S. (CA, ID, HI, and OR) and the Central Andes (Bolivia). Also included in the PGL collection are Antarctic meteorite stranding surface maps, topographic maps of Antarctica and selected terrestrial impact craters, and U.S. Geological Survey photomosaics and maps (topographic, shaded relief, and geologic) of Mercury, Venus, the Moon, Mars, and the Galilean satellites.

PALEOMAGNETISM LABORATORY

The Paleomagnetism Laboratory houses a magnetically shielded, low-field room with superconducting rock magnetometer, large capacity thermal demagnetization ovens, computer controlled alternation field demagnetizer, high field (27KG) pulse magnetizer, and equipment

for measuring magnetic susceptibility (MS) and anisotropy in magnetic susceptibility (AMS).

RADIOGENIC ISOTOPE FACILITY

The Radiogenic Isotope Facility consists of an instrument lab and two sample preparation laboratories. Isotope measurements are carried out on a new Finnigan MAT 262 thermal ionization mass spectrometer (TIMS) equipped with a high abundance sensitivity RPQ_{plus} device. Additional instrumentation includes a Spectro Modula EOP inductively coupled plasma atomic emission spectrometer (ICP-AES) with autosampling capability, and a Merchantek laser ablation station with computer controlled translation stage and video observation system for use with the ICP. These instruments and the TIMS are housed in a 500-square-foot laboratory adjacent to the chemistry labs. Most chemical procedures related to radiogenic isotope sample preparation are carried out in a state-of-the-art clean chemistry laboratory, housed in a 500-square-foot space provided with positive pressure and filtration to a 95% level, 16 lineal feet of hood space, and ULPA filtered laminar flow stations for ultraclean chemical procedures. A smaller, fully equipped wet chemistry lab is available for routine ICP-AES sample preparation.

COMPUTER LABORATORY

The computer laboratory consists of a cluster of Unix workstations (Sun and SGI), Pentium Windows-95 and Macintosh personal computers, a digitizing tablet, scanner, and EKOTONIX high-resolution scanning camera. The department has received funding from the University of Pittsburgh to develop a workstation-based Spatial Data Instructional Computer Laboratory. This laboratory will be used for graduate and undergraduate instruction, providing hands-on experience with state-of-the-art techniques in Geographic Information Systems and Remote Sensing. This lab will consist of 10 SPARC ICPs networked to a SPARC Ultra Serv-2 with 128 MB of RAM, an HP DesignJet 760CE Large Format Color Printer, and a video display device. Available software packages will include Arc/Info, ENVI, and ERMapper. The new Spatial Data Laboratory allows the department to offer a new undergraduate certificate in Geographic Information Systems.

Supporting facilities are provided by the University's Computing Services and Systems Development (CSSD), including photo-quality color printers, document and slide scanners, and video capture/editing and 3-D rendering capabilities that are accessible for research use.

ADMISSIONS

Prospective graduate students must meet **Faculty of Arts and Sciences** requirements for entrance into graduate programs (*see Admissions on page 34 for details*). Students applying to the Department of Geology and Planetary Science may be admitted to full graduate status or with provisional status, depending on their undergraduate major area of study, grade point average, and Graduate Record Examination scores. Full graduate status may be offered to students who have completed an appropriate undergraduate program in one of the natural or physical sciences related to geology and planetary science (for example—astronomy, biology, chemistry, engineering, geology, mathematics, physics) and received satisfactory grades (generally B or higher) in their science and math courses. Each application is individually reviewed as there is no rigid credit requirement or series of courses required for admission.

Students who have received a master's degree from the Department of Geology and Planetary Science and wish to enter the PhD program

should submit a standard application to the department. They will be judged on the same basis as all other applicants. Students with course deficiencies or a QPA below 3.00 may be admitted with provisional status. Provisional students are not eligible for teaching assistantships. Transfer from provisional to full status may occur upon formal recommendation of the department following satisfactory completion (grades of A or B) of course deficiencies noted at time of admission and/or completion of four courses (12 credits) for which graduate credit is earned with at least a 3.00 (B) average. Courses taken to remove deficiencies do not contribute toward fulfillment of graduate degree course requirements. To initiate change of status, the student's initial or major advisor must notify the Graduate Committee Chair in writing, and the Graduate Committee Chair must formally request of the Assistant Dean of Graduate Studies that the student be awarded full graduate status.

FINANCIAL ASSISTANCE

Financial assistance for graduate students is provided in the form of teaching and research appointments, fellowships, traineeships, tuition scholarships, and loans. Application for financial aid should be made on the regular application for admission to graduate study. Admission to graduate study does not carry any implication concerning the award of financial aid. Only students with full graduate status are eligible for financial assistance. Information concerning competitive grants and fellowships may be obtained from **FAS** Graduate Studies, Student Services (322 Thackeray Hall). *See also Fellowships and Traineeships on page 36 and Financial Aid on page 7.*

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with department-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

The Master of Science degree requires completion of a minimum of 24 credits of which 18 must be formal lecture classes. Six credits of thesis research are also required as is a comprehensive examination. The student must present a thesis showing marked accomplishment in the field of his/her major subject and competency in the methods and techniques of scientific investigation. The thesis is to be the result of an independent investigation conducted by the student. There is an oral defense of the thesis as well as a formal departmental seminar presentation. All MS theses shall serve as sources of published material.

REQUIREMENTS FOR THE PhD DEGREE

The Doctor of Philosophy degree requires completion of 72 credits of which 36 must be formal lecture and laboratory courses. Completion of a preliminary evaluation by the beginning of the second year is required in order to guide selection of remaining courses. Upon successfully completing the preliminary evaluation and required course work, and after beginning his/her dissertation research, the comprehensive examination must be taken before the end of the third year; students entering with a master's degree should take the exam during the second year. Students are encouraged to take the comprehensive examination as soon as possible. The purpose of the comprehensive examination is to demonstrate that the student has mastery of the field of interest and the ability to do dissertation-level research. The comprehensive examination must be passed at least eight

months before the PhD degree is awarded. If the degree is not completed within three calendar years after passing the examination, the student must repeat the examination unless exempted upon the recommendation of his/her doctoral committee with the approval of the Department Chair.

The comprehensive examination consists of two parts: preparation of two written research proposals and an oral examination. The proposals must be provided to the comprehensive examination committee at least two weeks prior to the oral presentation. Questions will focus on the proposal topics and closely related areas, but may also cover other areas. The student should demonstrate knowledge of facts and concepts, resource materials, history, and current literature in the research areas covered in the proposals, and the ability to integrate the research materials into new, creative concepts as may be required for the successful completion of significant research.

After completion of the comprehensive examination, the student should consult with his/her major advisor and propose a dissertation committee. After the specific dissertation topic has been chosen and data collection begun, the student must schedule a dissertation overview. At this meeting, the student shall present a clear and concise statement of the purpose and scope of the dissertation research, a detailed plan of research, and the expected significance of the research. The purpose of the dissertation overview is for the committee to approve formally of the dissertation topic, and to critique the research plan and proposed methodology. The overview provides an opportunity for the members of the committee to review the student's research program. Subsequently, the student shall schedule a dissertation overview once per year in order to keep the dissertation committee informed of progress, and to give the members an opportunity to suggest possible improvements in research methodology or analysis.

Following approval of the dissertation overview by the committee, the Department Chair and the Assistant Dean of Graduate Studies, the student may apply for admission to candidacy.

Each student must write and present a dissertation embodying an extended original investigation of a problem of significance in the student's field of specialization. The dissertation must add to the general store of knowledge or understanding in its field and be of sufficient importance to merit publication. The dissertation shall be defended during a departmental meeting with the dissertation committee and shall be presented at a public departmental seminar. The degree shall be awarded upon submission of the results for publication as a peer reviewed article in an acceptable journal.

There is no formal language requirement, although individual advisors may require a reading knowledge of a foreign language.

COURSE LISTINGS

UNDERGRADUATE COURSES THAT MAY CARRY GRADUATE CREDIT

GEOL	1001	Mineralogy
GEOL	1003	Igneous and Metamorphic Petrology
GEOL	1020	Sedimentology and Stratigraphy
GEOL	1050	Regional Geology of the United States
GEOL	1051	Groundwater Geology
GEOL	1055	Environmental Science, Ethics, & Public Policy
GEOL	1060	Geomorphology
GEOL	1079	Field Methods

GEOL	1080	Geoarcheology
GEOL	1100	Structural Geology
GEOL	1200	Paleontology
GEOL	1201	Extinctions
GEOL	1240	Evolution of Vertebrates
GEOL	1400	Introduction to Solid-Earth Geophysics
GEOL	1410	Exploration Geophysics
GEOL	1413	Well Logging
GEOL	1445	GIS, GPS, and Computer Methods
GEOL	1460	Remote Sensing of the Earth
GEOL	1500	Chemistry of Earth and its Environment
GEOL	1501	Analytical Geochemistry
GEOL	1515	Environmental Geochemistry
GEOL	1601	Economic Geology of Ores
GEOL	1602	Mineral and Energy Resources
GEOL	1640	Geologic and Environmental Hazards
GEOL	1701	Planetary Geology

COURSES CARRYING GRADUATE CREDIT

GEOLOGY

GEOL	2021	Advanced Igneous Petrology
GEOL	2023	Advanced Metamorphic Petrology
GEOL	2024	Precambrian Geology
GEOL	2050	Carbonate Petrology
GEOL	2051	Sandstones
GEOL	2052	Clastic Depositional Environments
GEOL	2054	Soils and Micromorphology
GEOL	2100	Advanced Structural Geology
GEOL	2110	Plate Tectonics
GEOL	2111	Geotectonics
GEOL	2201	Seminar in Systematics and Evolution
GEOL	2202	Micropaleontology
GEOL	2203	Paleoecology
GEOL	2204	Biostratigraphy and Taphonomy
GEOL	2220	Evolution and the Fossil Record
GEOL	2221	Morphological Analysis
GEOL	2451	GIS and Computer Methods
GEOL	2640	Geologic and Environmental Hazards

GEOPHYSICS

GEOL	2400	Physics of the Earth's Interior 1
GEOL	2401	Physics of the Earth's Interior 2
GEOL	2430	Geomagnetism and Paleomagnetism
GEOL	2431	Rock Magnetism

GEOCHEMISTRY

GEOL	2500	Advanced Geochemistry
GEOL	2515	Advanced Environmental Geochemistry
GEOL	2520	Isotope Geochemistry
GEOL	2521	Introduction to Mass Spectrometry
GEOL	2522	Mass Spectrometry of Organics

PLANETARY SCIENCES

GEOL	2701	Planetary Physics 1
GEOL	2702	Planetary Physics 2
GEOL	2720	Lunar Geochemistry
GEOL	2740	Meteorites and the Solar System
GEOL	2750	Volcanology

GENERAL

GEOL	2000	Research and Thesis for the Master's Degree
GEOL	2990	Independent Study
GEOL	3000	Research and Dissertation for the PhD Degree
GEOL	3900	Topics in Geology
GEOL	3901	Topics in Sedimentology
GEOL	3902	Directed Study
GEOL	3910	Topics in Geotectonics
GEOL	3920	Topics in Paleocology and Paleontology
GEOL	3921	Topics in Paleoenvironmental Analysis
GEOL	3940	Topics in Geophysics
GEOL	3950	Topics in Geochemistry
GEOL	3960	Topics in Environmental Studies
GEOL	3970	Topics in Planetary Science
GEOL	3975	Topics in Volcanology
GEOL	3980	Topics in Igneous Petrology
GEOL	3985	Topics in Geoarcheology

Courses 3900-3970 may be elected by students who wish to pursue topics not covered in regularly scheduled courses. Arrangements must be made with the appropriate staff member before registration.

GERMANIC LANGUAGES AND LITERATURES

Graduate students may pursue an MA or PhD degree. On the MA level the Department of Germanic Languages and Literatures offers tracks in combination with the following programs:

- Pennsylvania Instructional Certificate 1, in cooperation with the University of Pittsburgh's **School of Education**
- TESOL (Teaching of English to Speakers of Other Languages), in cooperation with the Department of Linguistics
- Additional cooperative degrees are under development

These cooperative degrees typically can be completed in two calendar years and require 24 credits in the Department of Germanic Languages and Literatures plus additional work in the cooperating department, programs or schools. The German portion must be approved by the department's Director of Graduate Studies. The external portion must be approved by advisors from the participating programs.

CONTACT INFORMATION

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ADMISSIONS

Applicants must indicate which degree they wish to pursue. Students seeking admission to the MA program with a BA in German need a minimum quality point average of B (3.00). Students seeking admission for a PhD are expected to have completed an undergraduate degree in German with a minimum quality point average of A- (3.75). Students with undergraduate training in other fields will be considered for full graduate status if their background in German language and culture is sufficient to compete successfully in graduate level courses.

For admission to the PhD program, students completing their MA at the University of Pittsburgh must pass a preliminary evaluation consisting of a one-hour oral examination and the submission of two research papers (one in English and one in German) which, according to the student's judgment, represents his/her best scholarly work. For students entering with an MA from another institution, this evaluation takes place by the end of their first year of study at the University of Pittsburgh.

FINANCIAL ASSISTANCE

Students with a high proficiency in oral German are eligible for teaching assistantships or teaching fellowships. Students may also apply for graduate tuition scholarships, Andrew Mellon Predoctoral Fellowships, the Lillian B. Lawler Scholarship/Fellowship, the Provost's Humanities Fellowships, the Fellowships in Cultural Studies, and Exchange Fellowships with the Universities of Augsburg and Bonn. A number of these fellowships are available for first-year graduate students. Interested candidates should submit their completed applications to the department by the beginning of January. *See Fellowships and Traineeships on page 36 for further details.*

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with department-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

The Master of Arts degree normally requires two years of study. In certain exceptional cases the department may admit students intending to complete their MA degree in one academic year. (This is not an option for the MA in German with TESOL or Pennsylvania teaching certification.) The requirements for the MA degree consist of 24-30 credits of graduate seminars (depending on the MA track chosen) and an MA project (up to three credits of GER 2000). GER 2970 (Teaching of German) is mandatory for all Teaching Assistants/Fellows. All seminars counting toward the MA must be taken for letter grades and students need to maintain a B-average in their course work. With the

approval of the Director of Graduate Studies, six of the thirty seminar credits may be taken outside the department.

For their MA project, students should select an advisor by the end of their second term. The completed MA paper (about 35-50 pages) should be submitted to the chosen faculty advisor during the week following the Spring Term recess. (MA students who wish to continue for the PhD may petition the faculty to be exempt from the MA project and take three additional credits of course work in lieu of the MA project.)

Students must demonstrate a high level of proficiency in written English and German by submitting at least one paper written in each language. In addition, students must also demonstrate reading proficiency in an additional language by the end of their last term of study. The language may be one taught in secondary schools, one relevant to the German cultural traditions, or one related to a student's research interest.

REQUIREMENTS FOR THE PhD DEGREE

The requirements for the Doctor of Philosophy comprise 72 credits, 60 of which must be completed in organized course work. The 72 credits include 30 from MA studies at the University of Pittsburgh or 24 from MA studies at other institutions. Up to 18 of the course credits beyond the MA may be completed in graduate courses offered by other academic programs and departments at the University of Pittsburgh. These courses should comprise a coherent unit of work that has been developed in consultation with the department.

Courses completed outside of the department may be designated to fulfill requirements for established certificate programs in cognate programs (for example, Medieval and Renaissance Studies, Cultural Studies, Film Studies, Women's Studies, West European Studies), or they may be used to develop a subspecialty in connection with German (for example, in another language, Second Language Acquisition, History, History of Art and Architecture, Jewish Studies, Music, or Philosophy). The department defines course requirements for appropriate subspecialties in consultation with other departments and programs.

In addition to the satisfactory completion of courses with an overall A- average, students must demonstrate a high level of oral and written proficiency in both spoken and written English and German. They must also submit for departmental approval at least one seminar paper written in German and one in English and acquire reading proficiency in a third language that complements their research interests.

The PhD comprehensive examination, which cannot be retaken, is typically taken within one academic year. It consists of six written sections, each three hours long, as well as a one-hour oral examination. Two of the six written sections may be passed by taking final examinations in departmental seminars that have been approved for this purpose. The topics of the comprehensive examination are developed by the student in consultation with an examination committee of three faculty members appointed by the Director of Graduate Studies. They should include one period of German cultural history, one literary genre, a theme or topic that can be developed across the centuries to the present, and one theoretical or methodological issue. Two additional topics may be defined by the student or passed by course work and final examination. The oral section of the comprehensive examination offers opportunities to pursue issues raised in the written sections, including possible connections between topics.

With the formal approval of a thesis prospectus (10-15 pages) by the doctoral committee, students are admitted to PhD candidacy. Students writing their dissertation thesis must meet with their full doctoral committee once a year.

For completion of the PhD degree, the doctoral thesis must be approved by the doctoral committee after a public defense.

A more detailed synopsis and timetable of the PhD requirements is available from the Department of Germanic Languages and Literatures.

COURSE LISTINGS

GER	2110	Proseminar in Literary Theory
GER	2111/3111	Postmodernism in Germany
GER	2120	Introduction to German Studies 1: 1870-1945
GER	2121	Introduction to German Studies 2: 1945 to the Present
GER	2140	Proseminar in Literary History
GER	2144/3144	Intellectual History: Lessing to Freud
GER	2148/3148	History, Memory, and Narrative
GER	2150/3150	Folklore in Literature
GER	2200/3200	Lyric Poetry
GER	2600/3600	Age of Goethe
GER	2601/3601	Sturm Und Drang
GER	2608/3608	Romanticism
GER	2610/3610	Goethe
GER	2611/3611	Goethe's Dramas
GER	2613/3613	Goethe's Poetry
GER	2660/3660	Classical Drama
GER	2700/3700	Literature and Culture 1800-1900
GER	2702/3702	Double Outcasts
GER	2703/3703	Jewish Contributions to German Literature
GER	2808/3808	Germany at the Turn of the Century
GER	2810/3810	Weimar Culture
GER	2812	Culture of Exile: German Emigres in U.S.
GER	2820/3820	Kafka
GER	2830/3830	Modern Poetry
GER	2840/3840	Modern Drama
GER	2850/3850	The Modern Novel
GER	2860/3860	Post-war Literature and Culture
GER	2865/3865	Contemporary Literature and Culture
GER	2870/3870	GDR Literature
GER	2882/3882	Topics in German Cinema
GER	2884/3884	Weimar Cinema
GER	2886/3886	Film in the Third Reich
GER	2902	Directed MA Study
GER	2970	Teaching of German

HISPANIC LANGUAGES AND LITERATURES

The Hispanic Languages and Literatures Department offers programs leading to the MA and PhD degrees in Hispanic Languages and Literatures. Candidates for the MA and the PhD may also earn certificates in Latin American Studies, Cultural Studies, and/or Film Studies. See the *Graduate Student Handbook* for further details.

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ADMISSIONS

In general, students accepted into the graduate program must meet the following criteria:

- (1) They should have completed an undergraduate major (or the equivalent) in the language and either linguistics associated with the fields they propose to study at the graduate level
- (2) They should be able to enroll in courses that are taught entirely in Spanish and/or Portuguese. This presupposes a high level of skill in understanding, speaking, reading, and writing in their major language.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with department-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER OF ARTS IN HISPANIC LANGUAGES AND LITERATURES

The department offers a common Master of Arts program in Hispanic Languages and Literatures allowing major field concentration on:

- Latin American culture and literature
- Spanish culture and literature
- Luso-Brazilian literature
- Spanish linguistics
- Methodology and applied linguistics

On entrance into the department, the student is initially advised by the Director of Graduate Studies. After the first term the student may request a member of the Graduate Faculty with whom the student wishes to work toward completion of the graduate degree to serve as that student's advisor. Students are urged to maintain a close and continuing contact with their advisors, and at the same time, should

familiarize themselves with the policy statements of the department which are contained in the *Graduate Student Handbook*. Copies of the handbook are available in the departmental office.

The MA degree requires a minimum of 30 credits. The courses representing these 30 credits will be chosen by the student in consultation with his/her advisor. The guiding principle will be that of ensuring that the student achieves a general background in the major field, while allowing the student some freedom to focus on areas of his/her special interests or needs. A maximum of two 1000-level, one Independent Reading, and one Directed Study courses may be taken toward the MA degree, except for students majoring in Latin American culture and literature, who may take two 1000-level courses in Portuguese beyond this maximum.

Specific degree requirements, in addition to the minimum of 30 credits, are as follows:

- Completion of a long paper in the department, which must be approved by three faculty before the student can take the MA exam.
- An MA comprehensive examination or MA comprehensive/PhD preliminary examination (for students wishing to go on for the PhD) based on a major field and a minor field, to be designated by the candidate from one of the previously mentioned areas of focus (see *Graduate Student Handbook* for further details). MA students in literature/culture must take at least four courses in one of the areas offered; this will constitute their major field for the MA. They must take at least two courses in another of the areas, which will constitute their minor field. MA students in linguistics must be examined in four areas of their major field and two in their minor field.
- Successful completion of at least one graduate course in literature and one graduate course in Spanish linguistics (not in the Teaching Methodology/Applied Linguistics area).

Teaching Assistants and Teaching Fellows new to the department are required to take appropriate courses in methodology and language learning to assist them in teaching.

Students are required to take a minimum number of substantive courses within the department. Those who are pursuing a terminal MA degree must take 24 credits of course work in the department, of the total 30 credits that are required for the degree. The remaining six credits may comprise courses taken outside the department (including transfer credits), a maximum of three credits of Directed Study (Spanish 2902), and three credits of MA Comprehensive/PhD Preliminary Exam preparation (Spanish 2990).

Those who are working toward both the MA and the PhD degrees in the Hispanic Department must take a total of 48 credits of substantive courses in the department, of the 72 credits required for the PhD. The remaining 24 credits may consist of:

- Courses taken outside the department
- Six credits transferred from other institutions
- Up to six credits of Directed Study (Spanish 2902 or 3902)
- Up to three credits of MA Comprehensive/PhD Preliminary Exam preparation (Spanish 2990)

- Up to nine credits of PhD Comprehensive Exam/Overview (Spanish 3910)
- Up to a maximum of 12 credits of PhD Dissertation (Spanish 3000)

Students who enter the department with a master's degree from another institution must complete 30 credits of substantive course work in the department out of the 72 total credits required for the PhD degree. The remaining 42 credits may be distributed among credits transferred from the institution from which they earned their MA degree, course work taken at the University of Pittsburgh in departments (or programs) other than Hispanic Languages and Literatures, up to three credits of PhD Preliminary Exam preparation (Spanish 2990), up to nine credits of PhD Comprehensive Exam/Overview (Spanish 3910), and up to a maximum of 12 credits of PhD Dissertation (Spanish 3000).

LANGUAGE REQUIREMENT

For the MA degree, no foreign language other than Spanish is required. However, Latin American culture and literature majors are strongly urged to study Portuguese. Native speakers of Spanish must pass a speaking examination in English. All students are strongly advised to study a second language; Portuguese is particularly recommended.

MA PROGRAM IN SPANISH WITH CERTIFICATION FOR TEACHING IN PENNSYLVANIA

As this is a joint program, students choosing this program must fulfill the entrance requirements and be admitted to the **School of Education**, the Department of Hispanic Languages and Literatures, and **FAS**. Students will take a minimum of 24 credits in the Department of Hispanic Languages and Literatures, plus specific courses indicated by the **School of Education**. The program is not open to students who already hold certification.

Students should consult the departmental advisor in drawing up their program and in preparing for the MA examination.

REQUIREMENTS FOR THE PHD DEGREE

The PhD program in the Department of Hispanic Languages and Literatures is available in Spanish culture and literature; Latin American culture and literature, Brazilian culture and literature; Spanish linguistics; or methodology and applied linguistics. At the discretion of the major advisor, candidates may take a certain amount of coursework in other fields or interdisciplinary programs. The following special requirements must be met by all departmental aspirants to candidacy:

- 1) Each student must take a preliminary examination before he or she can officially become a doctoral candidate. Details about this examination may be found in the *Graduate Student Handbook*.
- 2) Each student must complete at least one graduate course in literature and one graduate course in linguistics.
- 3) After completing 60 credits of course work and passing the foreign language requirement and the PhD comprehensive examinations as described in the *Graduate Student Handbook*, each student will devote the final stage of his/her program to the preparation of a dissertation as prescribed by **FAS** Graduate Studies. An additional 12 credits must be earned in dissertation research or independent study.

LANGUAGE REQUIREMENT

Candidates for the PhD degree must give evidence of their ability to read one language other than their major language. PhD candidates in Latin American culture and literature must meet a proficiency requirement in Portuguese.

COURSE LISTINGS

Courses numbered in the 1000s are advanced undergraduate courses but may be taken by graduate students with the permission of the graduate advisor. Graduate courses numbered 2000 and higher vary greatly from term to term. The following courses are usually offered in rotation over a period of two or three years. Students should consult the *Schedule of Classes* and the *Course Descriptions* published prior to the term in which they are registering.

SPAN	2190	Literary Translation
SPAN	2192	Topics in Translation
SPAN	2195	Professional Translation 1
SPAN	2196	Professional Translation 2
SPAN	2224	Special Topics in Latin American Cultural Studies
SPAN	2225	Seminar: Special Topics Cultural Analysis
SPAN	2226	Readings in Critical Theory
SPAN	2301	Advanced Grammar
SPAN	2302	History of the Language
SPAN	2303	Structure of Modern Spanish
SPAN	2304	Dialectology
SPAN	2305	Morphology
SPAN	2306	Spanish Applied Linguistics
SPAN	2307	Methods of Teaching Spanish
SPAN	2308	Syntax
SPAN	2309	Phonology
SPAN	2310	Semantics
SPAN	2311	Hispanic Sociolinguistics
SPAN	2312	Pragmatics
SPAN	2313	Computerized Linguistic Studies
SPAN	2314	Special Topics in Linguistics
SPAN	2315	Seminar: Linguistics and Methodology
SPAN	2316	Theory and Practicum: Foreign Language Teaching
SPAN	2317	Research and Field Methods in Spanish Sociolinguistics and Applied Linguistics
SPAN	2318	Seminar: Applied Socio-pragmatics
SPAN	2404	Pre-Columbian Topics
SPAN	2414	Discovery and Conquest Topics
SPAN	2421	Colonial Literature
SPAN	2422	Colonial Topics
SPAN	2423	Seminar: Colonial Literature
SPAN	2426	Latin American Romanticism
SPAN	2428	Latin American 19th-century Topics
SPAN	2429	Seminar: Latin American 19th-century Topics
SPAN	2430	Modernism
SPAN	2434	Modernism: Topics
SPAN	2435	Seminar: Modernism

SPAN	2440	Vanguard
SPAN	2444	Vanguard Topics
SPAN	2445	Seminar: Vanguard
SPAN	2450	Contemporary Latin American Narrative
SPAN	2452	Contemporary Latin American Film
SPAN	2460	Latin American Drama
SPAN	2461	Latin American Novel
SPAN	2462	Latin American Poetry
SPAN	2463	Latin American Short Story
SPAN	2464	Latin American 20th-century Topics
SPAN	2465	Seminar: 20th-century Topics
SPAN	2469	Latin American Essay
SPAN	2470	U.S. Latino Literature and Culture
SPAN	2475	19th-century Brazilian Novel
SPAN	2476	Latin American Novel
SPAN	2570	Contemporary Hispanic Literature
SPAN	2580	Contemporary Hispanic Film
SPAN	2602	Medieval Spanish Topics
SPAN	2610	Renaissance
SPAN	2614	Renaissance Topics
SPAN	2615	Seminar: Renaissance Topics
SPAN	2620	Golden Age and Baroque Survey
SPAN	2621	Spanish Literature of Golden Age Drama
SPAN	2623	Don Quijote
SPAN	2624	Golden Age Topics
SPAN	2634	Baroque Topics
SPAN	2635	Seminar: Baroque
SPAN	2644	Enlightenment Topics
SPAN	2657	19th-century Topics
SPAN	2660	Realist and Naturalist Narrative
SPAN	2670	Generation of '98
SPAN	2680	Generation of '27
SPAN	2690	Contemporary Peninsular Literature
SPAN	2694	20th-century Peninsular Topics
SPAN	2695	Seminar: 20th Century
SPAN	2700	Literary Criticism
SPAN	2702	Introduction to Literary Studies
SPAN	2704	Special Topics in Literary Criticism
SPAN	2705	Seminar: Literary Criticism
SPAN	2706	Analysis of Hispanic Literary Texts: Spanish Literature Survey
SPAN	2707	Latin American Literary Criticism
SPAN	2902	MA Directed Study
SPAN	2970	Professional Translation Internship
SPAN	2990	MA Comprehensive Independent
SPAN	3000	Research and Dissertation for the PhD Degree
SPAN	3902	PhD Directed Study
SPAN	3910	PhD Comprehensive Examination
SPAN	3990	PhD Independent Study

HISTORY

The primary purpose of the History Department's graduate program is to provide training in historical research and teaching to students who wish to find careers in colleges, universities, and other settings where the skills of the historian can be used. To advance this purpose, the department encourages a climate of intellectual inquiry and active research that embraces graduate students and faculty members alike. The hallmark of the program is the high measure of independence and flexibility it allows students in shaping a curriculum that meets their needs, within the limits of faculty expertise and available resources. These resources include a wide variety of research materials housed in various depositories in the Pittsburgh region, close relationships with historians at other local universities, and programs and seminars available through the Center for Social History. With historians specializing in four major areas of the world: Europe (including Russia and Eastern Europe), the United States, East Asia, and Latin America, the department offers comparative and cross-cultural courses focusing on the Atlantic world, the history of capitalism, labor and the working class, comparative nationalism, race, and gender relations. Current course offerings and the requirements for degrees appear later in this section. Since these do change, persons interested in the graduate program are urged to request updated materials and a copy of the department's *Graduate Rules and Regulations* by writing: Graduate Secretary; Department of History; University of Pittsburgh; Pittsburgh, PA 15260; or by E-mail: gracet@pitt.edu. The Graduate Secretary will also provide information about admission requirements.

CONTACT INFORMATION

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ADMISSIONS

Admission to the graduate program in History has become quite competitive. Candidates must present:

- A career statement
- A sample of their written work on a historical topic
- Undergraduate and/or graduate transcripts
- Graduate Record Examination (GRE) scores for the aptitude sections only
- Three letters of recommendation
- Test of English as Foreign Language scores are required of all applicants whose primary language is not English

Individuals interested in the graduate program should request the required application forms by writing to the following address:

Graduate Secretary
 Department of History
 University of Pittsburgh
 Pittsburgh, PA 15260
 E-mail: gracet@pitt.edu

The Graduate Secretary will also provide applicants with a copy of the department's *Graduate Rules and Regulations*.

FINANCIAL ASSISTANCE

Financial aid comes in a variety of forms. The most common are teaching assistantships and teaching fellowships. Mellon Predoctoral Fellowships that require no teaching duties are nominated by the department's graduate committee from among the students at the dissertation stage. The fellowships are renewable for a second year in outstanding cases. The Lillian B. Lawler Fellowship is available to students who are working on their dissertations and who show distinction in teaching as well as research. The Carolyn Chambers Fellowship rotates between the Department of History and the Department of English and is available to students writing their dissertations. The K. Leroy Irvis Fellowship is available to highly qualified minority students. Fellowships are available through the Cultural Studies Program for students affiliated with that program who are writing dissertations. The department may also be able to offer one or two first year fellowships, without teaching responsibilities, to first year students. *Details on many of these fellowships are available under Fellowships and Traineeships on page 36.*

Students specializing in East Asian, Latin American, Russian/East European, and Western European history are also eligible to apply for other fellowships through the **University Center for International Studies (UCIS)**, 4G01 Posvar Hall, University of Pittsburgh. Application forms and information concerning these awards should be obtained from the appropriate area program office in UCIS and submitted at the same time the student applies to the Department of History for admission. *See University Center for International Studies section on page 365 for more details.*

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with department-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

The Master of Arts degree in History may be completed by full-time students in either two or three years. Eight courses (24 credits) are required for the degree. Of these eight, as many as three may be lecture courses in the 1000 series, but students are encouraged to take as much of their work as possible at the seminar level. At least five units must be seminars. One of the eight courses must be outside the Department of History in a related discipline.

Each student must present two papers, which are kept as part of the student's permanent record and are considered equivalent to a master's thesis. One must be a research paper; the other may be either a reading paper or a second research paper. A research paper, normally developed in a research seminar, involves a major original research project employing primary sources, and is presented to the seminar for evaluation and criticism. A reading paper, normally developed in a reading seminar, involves the analysis of a range of secondary literature on a given topic or problem. Where no suitable seminar is offered, the student may develop one of the two papers—either reading or research—as an individual project under the guidance of a faculty member (HIST 2902), but the other should be undertaken in seminar. The two papers

must be done for two different instructors, and students are urged to choose two topics separated from each other in time or geography.

Proficiency in one research tool is required for the master's degree. This requirement is met by demonstrating reading knowledge of a foreign language or competence in quantitative techniques. The student must, in consultation with his/her advisor, select the research tool most useful to the student's specialization. Students are urged to complete language preparation before entering graduate school, not only to lighten their workload, but also because some seminars require the use of a foreign language.

At the end of his/her program, the candidate must take an oral examination covering the work completed and emphasizing particularly the interrelationships among courses and seminars. Upon the student's completion of these requirements, the department, after considering the recommendation of the student's committee, will decide upon the award of the master's degree and upon admission into the PhD program.

REQUIREMENTS FOR THE PHD DEGREE

Prerequisite for admission to the doctoral program is a master of arts degree or equivalent preparation (plus approval, for those previously enrolled in the department).

Proficiency in two research tools is required for the doctorate, either two languages or one language and quantitative techniques. The requirement is met by demonstrating reading knowledge of the foreign language(s), and/or competence in quantitative techniques. The student must, in consultation with his/her advisor, select the two research tools most useful to the student's specialization. The first tool requirement is fulfilled before the MA, and the second must be completed before the student undertakes his/her comprehensive examinations. Students entering with the MA will present their first tool upon admission or during the first year of residence, and their second before the comprehensive examination.

Doctoral study is both formal and informal. All students will be required to attend and participate in one reading seminar during each one of three terms after being admitted to the PhD program. In addition, students will take directed independent study under various instructors. The student who enters with an MA degree from another institution must complete a research seminar and sit for an oral PhD preliminary examination before the department decides upon the student's admission into the PhD program. The PhD comprehensive consists of oral examinations in four fields and should be taken during the fourth term of work beyond the MA. At the discretion of the student's committee, written examinations covering one or more fields may be required in addition to the oral examinations. Students who fail the comprehensive examination have the right, after conferring with the committee, to retake all or part of the examination. The new examination may be written if the student desires.

The comprehensive examination is divided into four fields (detailed under points 1, 2, and 3 below):

- 1) The four general areas of Trans Europe (which includes Western Europe and Russia and Eastern Europe), the United States, East Asia, and Latin America.
- 2) The specialized field within one of the general fields. This field is usually closely related to the student's dissertation topic.

3) In addition, the student, in consultation with his or her major advisor, will select a minimum of two additional fields, from the following three: topical field, related (outside) field, and minor field.

The topical field is inherently comparative and focuses on some aspect of history in more than one geographical and/or cultural context. Two members of the student's comprehensive committee serve as examiners in this field.

The related field is from outside the Department of History. Students who decide to omit the related field must explain how they will meet the FAS requirement that their doctoral thesis committee have on it a faculty member from outside the History Department.

After having selected a suitable dissertation topic, in consultation with the appropriate advisor, the student will present a written overview to the doctoral committee describing the purpose, scope, and method of the proposed study and the sources upon which it will be based. With the acceptance of this prospectus at the overview examination and the approval of the Assistant Dean of Graduate Studies, the student is formally admitted to candidacy for the PhD degree.

The dissertation, directed and evaluated by the student's doctoral committee, is expected to demonstrate the student's capacity to carry out independent, original research. Only if the dissertation is judged to demonstrate such competence, after formal defense in a final oral examination, does the department recommend the awarding of a degree.

COURSE LISTINGS

The department also accepts for MA graduate credit all history courses numbered 1000-1999, except for HIST 1000 and 1001.

HIST	2001	Introductory Research Methods
HIST	2003	Modern European Historiography
HIST	2004	Philosophy of the Cultural and Social Studies
HIST	2005	Special Topics
HIST	2006	Special Topics
HIST	2007	Special Topics
HIST	2008	Quantitative Methods 1
HIST	2009	Quantitative Methods 2
HIST	2010	Graduate Teaching Seminar
HIST	2020	Constructing the Early Modern World
HIST	2042	Sociology of Revolution
HIST	2049	Comparative Welfare States
HIST	2050	Political Practice and Reason in European Social Thought
HIST	2055	Comparative Labor
HIST	2069	Gender in Global Perspective
HIST	2070	Early European History—Readings
HIST	2080	Problems of European History—Readings
HIST	2081	Problems of European History—Research
HIST	2082	Comparative Nationalisms—Readings
HIST	2083	Comparative Nationalisms—Research
HIST	2085	Comparative Common Law
HIST	2086	Comparative Common Law—Research

HIST	2087	Comparative Military Systems
HIST	2090	The Natural and the Human Sciences: The Classical Tradition
HIST	2091	Historical and Sociological Perspectives: Public Health
HIST	2118	Early Modern Europe
HIST	2149	The Interpretation of Marx
HIST	2150	Modern German Social Thought
HIST	2151	European Classical Sociology
HIST	2152	Modern European Social Thought
HIST	2153	Max Weber
HIST	2154	Max Weber's Comparative History
HIST	2155	European Labor
HIST	2156	British Labor
HIST	2211	Graduate Reading in East Europe
HIST	2212	Idea of Europe
HIST	2311	Graduate Reading in Russia To 1917
HIST	2312	Graduate Research in Russia To 1917
HIST	2313	Readings: Soviet Union
HIST	2314	Research in Soviet History
HIST	2315	Whose Socialism? Whose Enemies?
HIST	2400	East Asia Introduction
HIST	2401	East Asia Readings
HIST	2402	East Asian Research
HIST	2403	Chinese Studies Since 1950
HIST	2432	Readings in Early Modern Japan
HIST	2433	Readings on Modern Japan
HIST	2434	World War II in Asia—Readings
HIST	2500	Latin American Reading
HIST	2501	Latin American Research
HIST	2503	State and Society: Latin America
HIST	2504	Latin American Studies in U.S.: 1945-1990
HIST	2506	Afro-Latin America
HIST	2507	19th-century Latin America
HIST	2600	United States to 1877 Reading
HIST	2601	U.S. General Field 2
HIST	2602	U.S. Research
HIST	2652	U.S. Politics and Political Theory 1
HIST	2653	U.S. Politics and Political Theory 2
HIST	2655	Graduate Reading U.S. Labor History
HIST	2656	U.S. Labor Research
HIST	2657	Theory and Methods in Social History
HIST	2660	U.S. Women Research
HIST	2661	Comparative Women
HIST	2665	Readings: History of American City
HIST	2668	U.S. Urban Social Structure 1
HIST	2669	U.S. Urban Social Structure 2
HIST	2670	Native Americans in U.S. 1783-Present
HIST	2700	Race and Class in U.S. Politics
HIST	2710	Social History of Ancient Worlds

HIST	2721	Atlantic History–Readings
HIST	2722	Atlantic History–Research
HIST	2751	Comparative Labor History
HIST	2752	Historiography of European Imperialism 1
HIST	2753	Historiography of European Imperialism 2
HIST	2770	Comparative Slavery and Abolition
HIST	2771	Comparative Race Relations: Cuba and the U.S.
HIST	2775	Religion and History
HIST	2902	Directed Study
HIST	2990	Independent Study
HIST	3000	Research and Dissertation for the PhD Degree
HIST	3649	Evaluation of American Social Welfare
HIST	3902	Directed Study

HISTORY OF ART AND ARCHITECTURE

The Henry C. Frick Department of the History of Art and Architecture offers graduate programs leading to the MA and PhD degrees. These programs offer a concentration in the fields of early modern art and architecture (medieval through 17th-century Baroque), modern and contemporary art and visual culture (late-18th century to the present), and East Asian art and archeology (China and Japan). The programs are supported and enriched by interdisciplinary certificate programs at the University, by local museum collections, and by a research library located in the Henry Clay Frick Fine Arts Building. Advanced graduate students are able to establish a teaching portfolio and are encouraged to present papers at professional conferences and to publish original research.

The MA program is a two-year program designed to give students a broad grounding in the methods and subject areas of art history. The program emphasizes the development of research and writing skills through a series of research seminars and a final thesis requirement. In addition, most MA students get substantial teaching experience and some continue to teach in college and museum programs after graduation. The city of Pittsburgh has museums and other institutions that offer opportunities for professional internships in a variety of areas. Opportunities are also increasingly available to acquire experience with digital imaging systems. In recent years, students with the MA degree have competed successfully for a variety of museum positions in Pittsburgh and elsewhere, and have taught at colleges and universities.

The PhD program is designed to train students for serious scholarship in conjunction with academic and museum careers. Students concentrate in one of three fields: early modern art and architecture (medieval through 17th-century Baroque); modern and contemporary art and visual culture (late-18th century to the present); and East Asian art and archeology (China and Japan). For the most current information on the three fields, consult the department's Web page (see below for address).

Students in each field choose a research specialization (for example, late-medieval manuscripts or German expressionism) but at the same time train broadly in order to be able to teach across the entire field (for example, the medieval or modern field). Each field thus combines the traditional research focus of a PhD with a more broadly marketable knowledge and teaching ability. PhD students are expected to leave

the program not only with an impressive dissertation but also with a substantial teaching portfolio of courses both taught and envisioned.

Each of the three fields is supported by interdisciplinary certificate programs at the University. These include Medieval and Renaissance Studies, Cultural Studies, Women's Studies, and Area Studies programs coordinated through the **University Center for International Studies (UCIS)**, specifically, East Asian Studies, Latin American Studies, Russian and East European Studies, and West European Studies. These opportunities for interdisciplinary study enhance the student's marketability.

PhD students have secured tenure-track teaching positions across the country and have also held positions as museum curators, editors, and professionals in cultural resource management.

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RESEARCH

In the past five years, individual faculty have published, among other things, a textbook of world art and scholarly books on George Grosz, American public monuments, and Spanish medieval manuscripts. Major research projects are currently under way in Chinese archeology, medieval manuscripts, the architecture of medieval Florence, architectural theory, Italian Renaissance patronage, and 17th-century painting and drawing.

Graduate students have published articles on such topics as Renaissance portraiture, California architecture, and Chinese art and archeology. They have given papers at professional conferences in virtually every field represented by the department.

For current information on the research activities of faculty and students, consult the department's Web page (see above).

FACILITIES

The department is located in its own building, the Henry Clay Frick Fine Arts Building, on the edge of Schenley Park. The building also houses the Studio Arts department, the University Art Gallery, and the Frick Fine Arts Library, a research library in art and architecture that is one of the oldest and finest of its kind in the country. In addition, the department has a visual resources collection of over 750,000 slides and a growing database of digital images. A computer facility in the building is currently available to graduate students for communications and word-processing and a full-fledged computer lab is available in the Fine Arts Library.

Across the street from the Fine Arts Building is the Carnegie Museum of Art and Carnegie Library, both institutions with fine collections that complement the facilities of the department. Elsewhere in the area are high-quality museums, galleries, and important architectural and historic sites.

ADMISSION TO THE MA PROGRAM

To undertake graduate work in the department, a student should normally have the following preparation:

- (1) Completion of an undergraduate major in a discipline in the humanities with no less than a strong minor in art history (at least 12 credits with a B average in upper-division courses).
- (2) Completion of one major European language through the intermediate college level with a grade of B or better for students of Western art; students in Asian art should have begun work in Chinese and/or Japanese.

Exceptions are made in the case of superior students who have incomplete preparation in one of these areas, but not both.

Applicants to the MA program must provide the following:

- A statement of intellectual and professional goals and a short essay on why the applicant wants to study in the department
- A term paper or comparable demonstration of an ability to present the results of scholarship
- Evidence of language preparation
- Three letters of reference
- Certified scores on the aptitude sections of the Graduate Record Examination (GRE), and, if applicable, on the TOEFL

ADMISSION TO THE PHD PROGRAM

Students who intend to pursue a PhD degree must complete the MA program in Art History at the University of Pittsburgh or a comparable MA program at another institution. Application to the PhD program must be made by January 15 and should include the following:

- A statement of intellectual and professional goals and a short essay describing the projected dissertation area. Applicants should have a clear idea of their area of study and should have discussed their plans with an appropriate member of the faculty to ensure that the faculty member will agree to sponsor the application.
- An MA thesis or, if this is not available, a substantive demonstration of the student's ability to present the results of scholarship.
- Evidence of language preparation. Students matriculating from the MA program at the University of Pittsburgh must have a demonstrated proficiency in at least two foreign languages relevant to the proposed dissertation area; students entering the program from another institution must pass two language exams within the first year of residence to remain eligible for financial aid.
- Three letters of reference.
- Applicants from outside the University of Pittsburgh must provide certified scores on the aptitude sections of the Graduate Record Examination (GRE), and, if applicable, on the TOEFL.

FINANCIAL ASSISTANCE

Financial aid is available for a maximum of two years for the MA degree and for three years for the PhD degree. The department has two full fellowships, but the most common form of aid is a teaching assistantship (at the MA level) and a teaching fellowship (at the PhD level), both of which pay tuition and fees and a stipend for living expenses. Additional fellowships from the University without teaching obligations are also available on a competitive basis to exceptionally qualified applicants. *See Fellowships and Traineeships on page 36 for detail on these fellowships.*

Students who wish to be considered for financial aid must apply to the graduate program by January 15.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with department-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

The MA degree requires completion of a minimum of 27 credits, satisfaction of a foreign language requirement, and completion of a thesis, as detailed below:

FOREIGN LANGUAGE REQUIREMENT

Students must demonstrate reading ability in one foreign language. A major European language is required for students of Western art; Chinese or Japanese for students of Asian art. The requirement can be met either by departmental exam or by completing an appropriate level course at the University with a grade of B+ or better. The requirement must be passed in the first year to maintain eligibility for financial aid.

MINIMUM COURSEWORK REQUIREMENT

Twenty-seven credits (typically nine courses) must be taken at the 1000 level or above. Twenty-four of these credits must be in art history and three credits in a cognate course outside art history, as approved by the department. Six credits may be transferred from another approved graduate program. No more than two incomplete grades may appear on the transcript, and the minimum final QPA is 3.00.

Within the minimum course work requirement, there are two requirements that ensure the student's breadth and depth of preparation:

- 1) Research seminars: Three research seminars and one seminar in art historical methodology (HA&A 2005) are required, comprising 12 of the 27 credits required for the degree. Research seminars are 2000-level courses designed to introduce students to a body of scholarly literature and allow them to write an original research paper. At least two such seminars must be taken in the first year of residence.
- 2) Distribution requirement: The research seminars must cover at least three of the department's five major teaching areas: Asian, Medieval, Renaissance/Baroque, Modern/Contemporary, and Architecture. If not already met by the distribution of research seminars, a further requirement for students of Western art is to

take at least one graduate-level course in Asian art (1000-level or above); students of Asian art must take at least one graduate-level course in Western art. In special cases, the latter requirement may be fulfilled by taking a cognate course.

RESEARCH PAPER

The final requirement for the MA degree is an original research paper, produced under the supervision of two faculty readers and deemed satisfactory by a majority vote of the full faculty in residence. Typically, the research paper is a substantially revised version of a paper produced in a research seminar. It must be submitted no later than November 1 if the degree is expected to be completed in the Fall Term or no later than March 1 if the degree is expected to be completed in the Spring.

REQUIREMENTS FOR THE PHD DEGREE

The requirements for the PhD in the History of Art and Architecture are as follows:

FOREIGN LANGUAGE REQUIREMENT

PhD students must have certified reading proficiency in at least two foreign languages relevant to their field of study. Students matriculating from the MA to the PhD program must fulfill this requirement before applying to enter the PhD program. Students entering the PhD program with an MA from an outside institution must fulfill the requirement in their first year of study to maintain eligibility for financial aid.

Depending on the student's field of study, more than two foreign languages may be necessary to carry out advanced research. In this case, additional language study may be required, as determined by the student and the student's dissertation committee.

MINIMUM COURSEWORK REQUIREMENT

A total of 72 credits are required for the PhD degree, of which 27 may be transferred from the MA program at the University of Pittsburgh or 24 from MA programs in art history at other institutions. At the PhD level, 18 credits (typically six courses) must consist of graduate-level lecture courses (1000-level or above) or seminars (2000-level or above), in either art history or cognate disciplines relevant to the student's field of study. The remaining credits may be comprised of independent study and dissertation research, subject to the approval of the student's dissertation committee.

CORE COURSE

A core course in theory and methodology (HAA 2005) is required of all PhD students. Students matriculating from the MA program must take the course at the MA level before applying to the PhD program. Students entering the PhD program from another institution must take the course in their first year of study.

DISSERTATION COMMITTEE

In the first term of PhD study, the student must assemble a dissertation committee consisting of the faculty advisor, who serves as the dissertation director, and at least two other faculty members from the Department of History of Art and Architecture. (The Department Chair serves *ex officio* on the committee and may be counted as one of the three required members.) This committee must approve the student's dissertation topic, program of study, and the areas for comprehensive examination.

Annual meetings of the dissertation committee, to be chaired by the faculty advisor, are required by the University until the student finishes the degree or withdraws from the program.

COMPREHENSIVE EXAMINATION

The comprehensive examination is normally taken at the end of the second year in the PhD program. The examination committee (normally the same as the dissertation committee) tests the student in three areas that are usually conceived as broad research fields relevant to the student's dissertation. The examination consists of three written exams of four hours each, one written exam for each area, and one oral exam ranging over all three areas.

In some cases, one of the three examination areas may be a field related to another research interest or to a teaching interest.

ADVANCEMENT TO CANDIDACY

Students advance to candidacy for the PhD degree after they have passed their comprehensive examination and after their dissertation prospectus has been approved. The prospectus should define the dissertation topic, its relationship to the state of the field, the methodology of the dissertation, and the student's plan of research. The purpose of the dissertation prospectus is to demonstrate that the student has covered the basic literature on the topic and is ready to undertake independent dissertation research and writing.

When the prospectus is submitted, the dissertation committee is enlarged to include one additional member from outside the Department of History of Art and Architecture, normally from a cognate discipline in which the student has worked. (The committee may be further reconstituted at this stage if so desired.) Each member of this expanded committee must approve the dissertation prospectus by signing the student's formal application to PhD candidacy. The signed application must be filed while the student is still registered and at least eight months before the dissertation defense.

DISSERTATION

The final requirement for the PhD degree is the dissertation itself. While writing the dissertation, the student should continue to work closely with the dissertation committee. All students, even those not in residence, are required to submit annual progress reports to their committee by September 1. When the student has completed a satisfactory draft of the dissertation, the student and his/her committee schedule a dissertation defense, which is conducted as an oral examination by the committee. The committee may accept the dissertation as written or may require revisions. Once the committee has accepted the dissertation, the student must file a copy with appropriate illustrations and captions in accordance with University regulations on format and materials. *See Regulations Pertaining to Doctoral Study on page 23 for further detail.*

STATUTE OF LIMITATIONS

The Department of History of Art and Architecture follows the University-wide policy on the maximum amount of time students pursuing the PhD are allowed to complete the program. *See Statute of Limitations/Leaves of Absence on page 39 for detail.* Additionally, students who do not complete the degree within seven years after the comprehensive examination are required to retake the examination.

COURSE LISTINGS

HA&A	1010	Approaches to Art History
HA&A	1020	Museum Studies Exhibition Seminar
HA&A	1040	History of Architecture Theory
HA&A	1100	Special Topics: Ancient
HA&A	1103	Prehistoric Art

HA&A	2230	Medieval Illuminated Manuscripts
HA&A	2250	Early Gothic Architecture
HA&A	2260	Cathedral and City in Middle Ages
HA&A	2300	Special Topics: Renaissance
HA&A	2301	Special Topics: Baroque
HA&A	2305	Connoisseurship
HA&A	2310	Art and Politics in 17th-century Rome
HA&A	2312	16th-century Italian Drawings
HA&A	2320	Bernini and 17th-century Sculpture Rome
HA&A	2350	Renaissance Architecture
HA&A	2370	Seminar Early Italian Painting
HA&A	2375	Devotional Imagery
HA&A	2380	Florentine Renaissance Sculpture
HA&A	2385	Florentine Art 1400-1430
HA&A	2390	Donatello
HA&A	2395	Renaissance Rooms
HA&A	2400	Special Topics: Modern Arts
HA&A	2401	Special Topics: Contemporary
HA&A	2402	In the Warhol Museum
HA&A	2410	The Culture of Exile: German Emigres in the U.S.
HA&A	2430	18th-century Architecture
HA&A	2440	19th-century Architecture
HA&A	2450	19th-century European Art
HA&A	2460	Realism
HA&A	2465	Research on 19th-century European Painting
HA&A	2490	Topics in 20th-century Art
HA&A	2500	Special Topics: American
HA&A	2501	Special Topics: American 2
HA&A	2503	American Architecture
HA&A	2505	Seminar in American Portraiture
HA&A	2510	19th-century Images of American West
HA&A	2520	American Landscape Painting
HA&A	2530	American Genre Painting
HA&A	2540	Seminar on Winslow Homer
HA&A	2550	"Art Object" in Late 19th-century America
HA&A	2600	Special Topics: Chinese
HA&A	2601	Special Topics: Japanese
HA&A	2602	Special Topics: Asian
HA&A	2603	Ukiyo-e to Modern Japanese Prints
HA&A	2604	East Asian Research
HA&A	2605	East and Southeast Asia Bronze Age
HA&A	2606	Early Chinese Bronzes
HA&A	2607	Northeast Asian Art and Practice in Antiquity
HA&A	2700	Special Topics: India
HA&A	2800	Special Topics: Film

GENERAL

HA&A	2000	Research and Thesis MA Degree
HA&A	2901	Directed Study
HA&A	2902	Directed Study

HA&A	2970	Teaching of Art History
HA&A	2990	Independent Study
HA&A	3000	Research and Dissertation: PhD
HA&A	3902	Directed Study
HA&A	3903	Directed Study

HISTORY AND PHILOSOPHY OF SCIENCE

The graduate program in History and Philosophy of Science has as its mission research and teaching in the historical and conceptual foundations of science. It offers courses and seminars—many of them interdisciplinary—leading to the MA and PhD degrees. Qualified students can pursue an intensive course of study in the historical and philosophical dimensions of science. The course work in the department is both formal and informal. Some course work outside the department in the sciences, including computer science, history, or philosophy, is required. It is possible to design a program that leads to a master's degree in one of these fields while pursuing the PhD degree in History and Philosophy of Science. Graduate seminars are supplemented by colloquia in history and philosophy of science, by the activities of the Center for the Philosophy of Science, including contacts with its visitors, and by the possibility of research in the Archives of Scientific Philosophy.

Among the major topics currently being researched by the departmental faculty are the philosophy of space and time, matter theory from Descartes to Maxwell, Einstein and the theory of relativity, the interaction of science and philosophy since the Renaissance, the logic of scientific inference, science and theology, Newton's natural philosophy, the philosophy of psychology, 19th-century science, the history and philosophy of molecular biology, the philosophy of medicine, medieval and Greek science, scientific change and progress, and explanation in the social sciences.

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RESEARCH AND FACILITIES

The range and depth of faculty research interests provide extensive opportunities for research guidance and expertise covering a broad spectrum of topics in the history of science and the philosophy of science. The library facilities for research in the Pittsburgh area are extensive. The main University library contains a large and rapidly growing collection in the history and philosophy of science. The University's Falk Medical Library has specialized holdings in the history of medicine. The Hunt Botanical Library at Carnegie Mellon University has a world-famous collection in the history of the life sciences and includes the library of Carl Linnaeus. The University library houses the Archives for Scientific Philosophy, which includes the unpublished papers of Rudolf Carnap, Hans Reichenbach, Frank Ramsey, Heinrich Hertz, Bruno DeFinetti, and Wilfred Sellars.

SPECIALIZATION IN EARLY MODERN SCIENCE

The period from the 15th through the mid-18th centuries witnessed the birth of modern philosophy along with the scientific revolution. Startling new work occurred in mathematics and astronomy, mechanics and optics, iatrochemistry, biology and medicine, as well as metaphysics and epistemology. This period also witnessed new theory and practice in forms of government, the arts, education, and technology. The specialization is intended to allow students interested in this period to participate in a wide variety of seminars and informal discussions, as well as to make use of research materials. Students who pursue the specialization in Early Modern Science must fulfill all requirements for the History and Philosophy of Science PhD.

PROGRAM IN CLASSICS, PHILOSOPHY, AND ANCIENT SCIENCE

The Departments of Classics, Philosophy, and History and Philosophy of Science of the University of Pittsburgh jointly offer a graduate program leading to the degrees of Master of Arts and Doctor of Philosophy with a special concentration in Classics, Philosophy and Ancient Science. Although each student's primary association is with one of the three departments, depending on background and interests, students in the program work closely with each other and with the cooperating faculty, which is drawn from all three departments. Further information about this program can be obtained by writing to the Director, Program in Classics, Philosophy, and Ancient Science, 1518 Cathedral of Learning, University of Pittsburgh, Pittsburgh, PA 15260 or upon application to one of the three departments.

RELATED ACTIVITIES

There are a number of other regularly scheduled activities that enrich the graduate program of the department. Graduate students are encouraged to participate in these activities, which bring approximately 40 historians and philosophers of science to the campus each year.

ADMISSIONS

Applicants for admission to the graduate program in History and Philosophy of Science will be expected to have a suitable undergraduate degree, to have some knowledge of the natural or social sciences, and to submit the following:

- A completed application form
- Aptitude scores on the Graduate Record Examination
- A transcript of previous academic work
- A statement of career objectives
- Three letters of recommendation
- Sample of written work

Each application will be evaluated on its own merits. Applications for admission may be obtained from the departmental admissions officer. The deadline for completed applications is February 1. A descriptive brochure and a booklet for graduate students are available on request.

Both the PhD and MA degrees are awarded. Terminal MA degrees are sought by students who find studies in History and Philosophy of

Science relevant to their career interests. MA students have included persons with MD degrees, those pursuing the PhD in other fields or at other universities, librarians, and those doing archive or museum work.

FINANCIAL ASSISTANCE

Graduate students admitted to the PhD program are eligible to apply for financial aid. The major sources of such aid within the University are:

- **Graduate Teaching/Research Assistantships**
Stipend for two terms, medical benefits, and a tuition scholarship.
- **Teaching Fellowships**
Stipend for two terms, medical benefits, and a tuition scholarship.
- **A limited number of Andrew Mellon Predoctoral Fellowships**
The 2000-01 stipend is \$14,500 plus a tuition scholarship. The Mellon Fellowships are awarded on a competitive basis. Two **Faculty of Arts and Sciences** Fellowships are awarded: stipend for two terms and a tuition scholarship. *See Fellowships and Traineeships on page 36 for further detail on applying for Mellon Fellowships.*

In addition, some summer assistance is usually available. Details about these and other forms of financial assistance may be found in this bulletin. (*See Fellowships and Traineeships on page 36, and Financial Aid section on page 7.*) Students planning graduate work in history and philosophy of science are also eligible for fellowship support from the National Science Foundation and National Institutes of Health. All successful candidates for admission are automatically considered for financial assistance.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with department-specific degree requirements described in the following sections.

The core of the graduate program in History and Philosophy of Science is a series of seminars (approximately four to six are offered each term). These range from general surveys and methods of research to specialized research seminars on selected topics in History and Philosophy of Science. These courses are divided into three areas:

Area 1: Core sequence: a three-term introduction at the graduate level to the history and philosophy of science

Area 2: History of science

Area 3: Philosophy of science

REQUIREMENTS FOR THE MASTER'S DEGREE

The following details the requirements for the master's degree:

DISTRIBUTION-OF-STUDIES REQUIREMENTS

A minimum total of 24 credits in course work, distributed as follows:

- a. Nine credits from courses in Area 1 (core seminars).
- b. Fifteen credits from courses Areas 2 and 3, with at least six credits in each area.

No more than two non-HPS 1000 level courses may count towards the MA degree. No pre-1000-level courses can be used to satisfy the degree requirements. No HPS courses at the 1000 level count towards the degree.

LANGUAGE REQUIREMENT

Good reading knowledge of either French, German, Latin, Greek, or approved substitute language. The requirement can be satisfied by passing a reading exam set by the department or by obtaining a B or better in French 007 and French 008 or a B or better in German 021 and 022.

RESEARCH PAPER

Students must submit a research paper in the history of science and a research paper in the philosophy of science. Evaluations of papers will be limited to a master's pass/fail. A master's pass on both papers is required for the MA degree.

REQUIREMENTS FOR THE PHD DEGREE

Students pursuing the PhD in HPS must complete the following requirements:

- An MA degree in History and Philosophy of Science or completion of MA requirements.
- Further distribution of studies requirements; at least nine credits at the 1000 or 2000 level following (a maximum two 1000-level courses, including the two for the MA) in one of the following:
 - a. Philosophy, exclusive of philosophy of science and logic.
 - b. History, exclusive of history of science.
 - c. A field of natural sciences, social science, or computer science (courses taken towards the MA degree may be counted toward the requirement for the PhD).
- Proficiency in logic (equivalent to PHIL 1500).
- Language requirement: Good reading knowledge of two foreign languages (Latin, Greek, German, French, or approved substitute), or of one foreign language and proficiency in logic equivalent to PHIL 1520 or approved computer language (LISP, etc.). Students concentrating in the history of science must satisfy the language requirement with two languages. One foreign language exam must be passed before the student completes the comprehensive requirements. The second language exam must be passed before the student's prospectus examination.
- Satisfactory fulfillment of the comprehensive requirements.
- Submission of a significant and acceptable dissertation on a topic in the history and philosophy of science.
- Acquisition of some supervised teaching experience during the student's tenure at the University.
- A minimum of 72 credit hours of graduate credit.

These requirements are specific departmental requirements, in addition to the general requirements for the MA and PhD degrees laid down by the Graduate **Faculty of Arts and Sciences**.

COURSE LISTINGS

The following courses are currently offered by the department. Check the *Course Descriptions* published each term for detailed descriptions. It should be understood that this is an open-ended list; new courses are added as student demand warrants.

HPS	2497	Teaching Practicum
HPS	2501	Core Seminar in Philosophy of Science
HPS	2502	Core Seminar in History of Science 1
HPS	2503	Core Seminar in History of Science 2
HPS	2512	Ancient Scientific Astronomy
HPS	2513	19th-century Physical Sciences
HPS	2514	19th-century Biological Sciences
HPS	2515	History of Mathematics
HPS	2516	Intellectual Development in American Archeology
HPS	2517	The Mechanical Philosophy of the 17th Century
HPS	2518	Philosophy of Infinity
HPS	2519	History of Astronomy
HPS	2520	Newton
HPS	2521	Science and Religion in the 17th Century
HPS	2522	Special Topics in History of Science
HPS	2523	Newton's Optics
HPS	2525	20th-century Biology
HPS	2526	History of Relativity Theory
HPS	2527	The Human and the Natural Sciences: the Classical Tradition
HPS	2528	Galileo
HPS	2529	Leibniz
HPS	2530	Reading Seminar in History of Science
HPS	2531	Freud and Psychoanalysis
HPS	2532	History of the Old Quantum Theory
HPS	2533	Descartes
HPS	2534	General Relativity and Gravitation
HPS	2535	Nature and Laws of Nature and the Renaissance
HPS	2536	The Laws of Nature: The Modern Treatment
HPS	2537	Historiography of Science
HPS	2538	Early Modern Philosophy of Science
HPS	2539	Historiographies of Knowledge
HPS	2540	Philosophy of Science in the Middle Ages and the Renaissance
HPS	2541	Aristotle's Science and Metaphysics
HPS	2542	Hobbes and Spinoza
HPS	2543	Kant and Scientific Thought
HPS	2544	Locke and Leibniz
HPS	2545	Aristotle's Biology
HPS	2546	Modern European Social Thought
HPS	2547	Aristotle's Philosophy of Science

- HPS 2548 Causes and the Cosmos: Scotus and Spinoza
- HPS 2549 Modern European Social Thought
- HPS 2550 European Classical Sociology
- HPS 2551 Aristotle's Physics
- HPS 2552 Philosophy of the Human and Social Sciences
- HPS 2553 Darwin's Origin
- HPS 2554 Aristotle and the Atomists
- HPS 2555 Hobbes
- HPS 2556 Aristotle's Matter Theory
- HPS 2557 Contemporary Historian
- HPS 2558 Myth, Ideology and Science
- HPS 2559 Thermodynamics and Statistical Mechanics
- HPS 2560 The Molecular Revolution in Biology
- HPS 2561 Aspects of Hereditarianism
- HPS 2562 Probability and Statistics
- HPS 2563 History of Medicine
- HPS 2569 Max Weber
- HPS 2571 Going Molecular
- HPS 2580 Modern Cosmology
- HPS 2620 Seminar in Rhetorical Theory
- HPS 2625 Mathematics for Foundations
- HPS 2649 Science and Values
- HPS 2650 History and Philosophy of Computation
- HPS 2651 History and Philosophy of Economics
- HPS 2652 Recent Topics in Philosophy of Social Sciences
- HPS 2653 Models and Modeling in Science
- HPS 2655 Aristotelian and Tractarian Philosophy of Science
- HPS 2658 Philosophy of Medicine
- HPS 2659 Neurobiology and Reduction
- HPS 2660 Causality
- HPS 2662 Reduction
- HPS 2663 Perception
- HPS 2665 Theory Construction in Psychology
- HPS 2666 Seminar on Inductive Inference
- HPS 2667 Philosophy of Quantum Mechanics
- HPS 2668 Topics in Philosophy of Biology
- HPS 2669 Realism
- HPS 2670 Topics in the Sociology of Knowledge
- HPS 2671 Models of Scientific Change
- HPS 2672 Philosophy of Biology and Medicine
- HPS 2673 Studies in Aristotle
- HPS 2674 Artificial Intelligence and the Logic of Discovery
- HPS 2675 Philosophy of Space and Time
- HPS 2676 Carnap and Reichenbach
- HPS 2677 Determinism
- HPS 2678 Artificial Intelligence and Causal Modeling
- HPS 2679 Historical Perspectives in Philosophy of Mathematics
- HPS 2680 Reading Seminar in Philosophy of Science

- HPS 2681 Philosophy of Relativity Theory
- HPS 2682 Theories of Confirmation
- HPS 2683 Philosophy of Social Science
- HPS 2684 Perceptual Theory and Experimentation
- HPS 2685 Science and its Rhetoric
- HPS 2686 Causality in the Social Sciences
- HPS 2687 Rationality and Relativism
- HPS 2688 Scientific Explanation
- HPS 2689 Causation in Science and the Law
- HPS 2690 History and Philosophy of Psychology
- HPS 2691 Cultural, Social, and Psychological Explanation
- HPS 2692 Topics in History of Recent Philosophy of Science
- HPS 2693 Philosophy of Science in the Humanities
- HPS 2694 Bayesian Epistemology
- HPS 2695 History, Philosophy, and Theory of Archeology
- HPS 2696 Philosophy of Perspectives on Feminism
- HPS 2697 Knowledge Representation
- HPS 2699 Experiment and Practice
- HPS 2700 Science and Religion
- HPS 2701 Philosophy of Psychoanalysis 1
- HPS 2702 Philosophy of Psychoanalysis 2
- HPS 2902 Pre-MA Directed Study
- HPS 2990 Independent Study
- HPS 2999 Prospectus Research
- HPS 3000 Research and Dissertation for the PhD Degree
- HPS 3902 Advanced Directed Study

Other courses of interest are offered by the Departments of Philosophy, History, Anthropology, Linguistics, Economics, Sociology, Mathematics, Psychology, Physics and Astronomy, and Computer Science.

These lists are open-ended. As new courses are developed and introduced, they will be added to one or another list. At the time that the schedule for the next term is published, seminars will be marked as to whether they count in Areas 2 or 3. Reading courses that are given during the summer will be assigned to an Area at the time they are set up.

INTELLIGENT SYSTEMS PROGRAM

The graduate program in Intelligent Systems serves as a center at the University of Pittsburgh for advanced education and research in artificial intelligence and related areas of cognitive science. Drawing on strengths from many sectors of the University, and on over thirty funded research projects, the program offers a strong, well-balanced core curriculum in the fundamentals of AI and many opportunities for advanced research and training. The scope of the program is broad, but offers concentration in specific areas such as automated diagnosis, knowledge representation, machine learning, intelligent tutoring, natural language processing and discourse, planning, case-based reasoning, and uncertain reasoning. There are especially strong connections to research groups in the Department of Computer Science, the Learning Research and Development Center, the

Department of Information Science and Telecommunications, and the **School of Medicine**. The program also draws on associated faculty from other units, including the **School of Law**, the **Joseph M. Katz Graduate School of Business**, the Department of History and Philosophy of Science, the Department of Linguistics, the Department of Philosophy, and the Department of Psychology.

Students in the program may concentrate in such areas as:

- Formal studies of reasoning and learning, including default reasoning and induction, reasoning with uncertain information, machine learning, planning, machine diagnosis, human cognition, natural language processing, and applications of these theories.
- Experimental testing and validation of systems in applications such as diagnosis, inheritance reasoning, and planning.
- The nature of interactions between people and information processing tools, including the interaction between a student and a machine or human tutor, between a computer user and a computer, between a database user and the database, between a professional and a diagnosis machine, and between a programmer and a programming environment.
- Case-based reasoning, and applications of case-based reasoning, especially in legal domains and in tutoring applications.
- Computational linguistics, and especially natural language generation and discourse.
- Technologies related to the above foci, such as expert systems.

The program offers a Doctor of Philosophy degree. Guidance is also provided for students who wish to pursue joint- or dual-degrees in the program and another discipline. A Master of Science degree is available only to students who are pursuing a doctoral program in Intelligent Systems or who are enrolled simultaneously in another doctoral program elsewhere in the University. (The only exception to this rule involves the Medical Informatics track.)

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Director: Bruce Buchanan

Affiliated Faculty: ASHLEY (Law), BELNAP (Philosophy), BUCHANAN (Computer Science), COOPER (Medicine), DALEY (Computer Science), DRUZDEL (Information Sciences), FRIEDMAN (Medicine), GADD (Medicine), GRUSH (Philosophy), HIRTLE (Information Sciences), LESGOLD (Psychology), LEWIS (Information Sciences), LOWE (Medicine), MAY (Business), MOORE (Computer Science), MUNRO (Information Sciences), RAGHAVAN (Learning Research and Development Center), VanLEHN (Computer Science), WAGNER (Medicine)

RESEARCH

The faculty in the Intelligent Systems Program has a wide range of research interests, including the following: plan generation and plan recognition; resource-limited reasoning; computational models of rationality; case-based reasoning; legal information management and retrieval; philosophical logic; philosophy of social science and computer science; expert systems; hypothesis formation; medical decision-making; machine learning; application of probability theory and decision theory to medical informatics problems; bayesian belief networks; causal discovery; data mining; theory of learning algorithms; genetic algorithms; mathematical and philosophical foundations in computer science; decision-theoretic methods in intelligent systems; decision support systems for strategic business planning; development of information resources; methods for evaluation in medical informatics; design, evaluation, and implementation of computer-based tools for medical education and assessment; implementation and evaluation of clinical systems; clinical decision support; computer-based patient record systems; models of clinical communication; cognition; mental representation; neural systems; spatial cognition; classification; mathematical psychology; formal modeling and intelligent computer-based instruction of complex skills; operator modeling; visualization of constraints and information spaces; virtual environments; human-agent interaction; integrated multimedia medical record systems design and implementation; telemedicine applications of the electronic medical record; clinical, research, and educational applications of the Internet; use of goal-based task representations in multimedia workflow/project-management; supporting problem-based learning for medical teams; decision support systems in management science and in engineering; natural language processing; discourse; multimedia interfaces; neural networks; neurobiological models; data compression and error correction; intelligent tutoring systems; cognitive simulations; machine learning; construction of decision-theoretic reminder systems; computer-assisted medical decision-making; and data accuracy in computer-based medical records. For a complete listing of specific faculty members' research interests, see the program's Web site.

COMPUTATIONAL RESOURCES

Faculty and students in the Intelligent Systems Program are key personnel in many well-established research projects and centers. There are well-equipped laboratories associated with research groups in Computer Science, Information Science, the Learning Research and Development Center, and the Center for Biomedical Informatics. The program maintains a laboratory for student use, which is equipped with PCs and Unix workstations. Optical-fiber based Ethernet links program machines to the campus backbone, PITTNET, which provides access to all University computing facilities, the Pittsburgh Supercomputing Center, and the Internet.

ADMISSIONS

Students interested in applying to ISP's joint-degree program (that is, those pursuing an MS degree while pursuing a doctoral degree in another program), should find details about admission to joint-degree programs on the ISP's Web page at <http://www.isp.pitt.edu/>. Students applying to the regular PhD program should follow the procedures detailed below.

APPLICATION PROCEDURES

The program maintains updated information about program activities and detailed application instructions. Applicants should visit the

program's Web site at <http://www.isp.pitt.edu> before completing an application. Briefly, an application consists of the standard **Faculty of Arts and Sciences** admission forms, in addition to the following materials:

- A concise statement of purpose, providing information on the following points:
 - 1) Objective in pursuing a PhD in Intelligent Systems
 - 2) Theoretical background in relevant areas
 - 3) Background in relevant tools and applications (students should list programming languages with which they are familiar, indicating level of familiarity)
 - 4) Relevant practical experience, including industrial or commercial experience
- Graduate Record Examinations results; applications are not complete until scores have been received.
- Applicants who are not native speakers of English must take the TOEFL examinations and submit scores. Applicants from abroad should take note of the special instructions that apply. *See also Graduate Admissions of International Students on page 3.*

Applicants with the BA degree who are not enrolled in graduate programs at the University of Pittsburgh: These applicants should follow the normal application procedures for the PhD degree. The admissions committee is looking for students with strong research potential. Recognizing that people can come to this field in many ways, the program invites applicants from a wide variety of educational settings and disciplinary backgrounds. The committee does look for evidence of advanced standing and outstanding performance in some of the core areas relevant to the subject, including theoretical and applied computer science, cognitive psychology and other areas of cognitive science, linguistics, and symbolic programming and software engineering.

Applicants for the Medical Informatics track: Such applicants must specifically indicate their interest in this track. For additional information, please contact Dr. Gregory Cooper at gfc@cbmi.upmc.edu.

Applicants for the MS degree only who are enrolled in other graduate programs at the University of Pittsburgh: Applicants who are already in residence at the University should contact the program directly before filling out an application. Application procedures are simplified in this case. To be admitted, such applicants must demonstrate, for at least one term, satisfactory progress in their primary department. Full admission to the ISP MS program requires the completion of the equivalent of a master's degree in the parent department and approval to continue for the doctorate in that department.

Applicants who wish to apply for simultaneous admission to the ISP MS and another PhD program: Such applicants will be taken into consideration. To be admitted provisionally to the master's program, a student must be admitted to an appropriate home department by that department's admissions process. The admission will be provisional; provisional status will be removed when the applicant demonstrates satisfactory progress, for at least one term, in the primary department.

FINANCIAL ASSISTANCE

The program endeavors to provide financial support for all admitted students who require it. Support is currently available through a variety of sources, including externally supported research and training grants, University fellowships, and program funds. Further details are available on the ISP's Web page at <http://www.isp.pitt.edu>.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

The Intelligent Systems Program offers a Doctor of Philosophy degree. A Master of Science degree is available only to students who are pursuing a doctoral program in Intelligent Systems, or simultaneously elsewhere in the University, or who already hold the MD degree or an equivalent and are specifically admitted to the Medical Informatics track.

For details on requirements for MS degree (both standard MS and the Medical Informatics track), see detail under Requirements for the PhD Degree below.

REQUIREMENTS FOR THE PhD DEGREE

To earn the Doctor of Philosophy degree in Intelligent Systems, a student must complete a program of study approved by an advisory committee of faculty. This program must include:

- (a) The required courses shown below
- (b) At least four advanced courses in the field of intelligent systems
- (c) An MS-level project, approved by the faculty after an oral prospectus presentation, involving significant research, design, or development work and a written report
- (d) Successful completion of a comprehensive examination composed by an advisory committee
- (e) An acceptable dissertation

Successful completion of (c) satisfies the preliminary evaluation requirement of FAS. The advisory committee may waive requirements that have been satisfied through prior university-level study. The advisory committee normally consists of three faculty. At most one of these may be from outside the program, and no more than one can be non-tenure stream. At the time a dissertation committee has been formed, the advisory committee will be replaced by a larger dissertation committee, which will supervise and approve work on the dissertation.

COURSE REQUIREMENTS FOR STANDARD (NON-MEDICAL INFORMATICS) TRACK

This section describes the courses required for normal progress through the Intelligent Systems graduate degree programs. Check with the

program to ensure that the course requirements listed below are the most current.

PREREQUISITE COURSES (OR EQUIVALENTS)

CS	1510	Design and Analysis of Algorithms
CS	1511	Introduction to the Theory of Computation
CS	1571	Introduction to Artificial Intelligence
CS	1573	Artificial Intelligence Programming
PHIL	1500	Symbolic Logic

CORE COURSES (REQUIRED FOR MS AND PHD)

ISSP	2160	Foundations of Artificial Intelligence
ISSP	2170	Machine Learning and Communication
ISSP	3712	Knowledge Representation

THEORY COURSES

To complete the MS, students must take the courses listed under (A) and (B); Students pursuing the PhD must take those courses as well as the courses listed under (C):

- (A) One course in applied or mathematical statistics; acceptable courses are:

STAT	1631	Intermediate Probability
STAT	1632	Intermediate Mathematical Statistics

- (B) One course in theory of computation or algorithms; acceptable courses are:

CS	2110	Theory of Computation
CS	2150	Design and Analysis of Algorithms
ISSP	3520	Theory of Learning Algorithms

- (C) One additional course; any of the courses listed above are acceptable.

Equivalents of any these courses may be accepted by petition to the MS or PhD advisory committee.

ADVANCED COURSES

Four advanced courses, for both MS and PhD students, must be taken. For PhD students, these courses need not be taken before receiving the MS degree. In fact, one purpose of the requirement is to encourage advanced students to participate in some courses.

MASTER'S THESIS AND DOCTORAL DISSERTATION REQUIREMENTS

MASTER'S STUDENTS

ISSP	2000	Research and Thesis for the Master's Degree (used for MS project)
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DOCTORAL STUDENTS

PhD Comprehensive Examination

ISSP	3000	Research and Dissertation for the PhD Degree
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REQUIREMENTS FOR MEDICAL INFORMATICS TRACK

This section contains the requirements for obtaining a graduate degree in the Medical Informatics track of the Intelligent Systems Program (ISP/MI).

The following curriculum assumes that a student already has training in a health-care field; if this is not so, then the faculty will select a set of courses that teach the student basic medical knowledge, and the student may take these courses as electives.

PREREQUISITES

It is assumed that students enter the program with the following or equivalent knowledge. If not, then these courses or their equivalent should be taken, or the student should be prepared to learn this material as self study:

- Ability to program in C, C++, or Pascal
- Basic computer science concepts, for example the material covered in J.G. Brookshear's *Computer Science: An Overview* (Benjamin/Cummings, Redwood City, CA, 1991)
- CS 1541, or equivalent course about computer organization
- CS 1573 Artificial Intelligence Programming

REQUIRED COURSE WORK

The following courses are all required for the MS and PhD degrees:

ISSP	2010	Medical Informatics Journal Club and Colloquium (offered every term)
ISSP	2015	Introduction to Medical Informatics (offered in Fall Term)
ISSP	2060	Evaluation Methods for Medical Informatics (offered in Spring Term)
ISSP	2070	Probabilistic Methods for Computer-Based Decision Support (offered in Fall)
ISSP	2240	Decision Analysis and Decision Support Systems (offered in Spring)

Two out of any three of the following courses are required for an MS degree. All three are required for a PhD degree.

ISSP	2160	Foundations of Artificial Intelligence (suggested time: first year)
ISSP	2170	Machine Learning and Communication (suggested time: second year)
ISSP	3712	Knowledge Representation (suggested time: second year)

One of the following for the MS degree and PhD degree:

CS	1501	Data Structures and Algorithms
CS	1510	Design and Analysis of Algorithms (undergraduate-level)
CS	2150	Design and Analysis of Algorithms (graduate-level)
CS	3150	Advanced Topics in Design and Analysis of Algorithms

One of the following for the MS degree and both for the PhD degree:

ISSP	2040	Introduction to Clinical Multimedia and the Internet
ISSP	2190	Knowledge Representation and Clinical Decision Support Systems

The following is required for PhD students only:

TA ISSP 2015 (or an equivalent course in consultation with ISSP faculty.)

MASTER'S STUDENTS

ISSP 2000 Research and Thesis for the Master's Degree (used for MS project)

DOCTORAL STUDENTS

PhD Comprehensive Examination

ISSP 3000 Research and Dissertation for the PhD Degree

COURSE LISTINGS

- ISSP 2000 Research and Thesis for the Master's Degree
- ISSP 2010 Medical Informatics Journal Club and Colloquium
- ISSP 2015 Introduction to Medical Informatics
- ISSP 2020 Topics in Intelligent Systems
- ISSP 2030 Selected Topics in Intelligent Systems
- ISSP 2040 Introduction to Clinical Multimedia and the Internet
- ISSP 2050 Intelligent Systems Research Seminar
- ISSP 2060 Evaluation Methods for Medical Informatics
- ISSP 2070 Probabilistic Methods for Computer-based Decision Support
- ISSP 2080 Advanced Medical Informatics Seminar
- ISSP 2140 Introduction to Parallel Distributed Processing
- ISSP 2150 Information Processing Systems
- ISSP 2160 Foundations of Artificial Intelligence
- ISSP 2170 Machine Learning and Communication
- ISSP 2190 Knowledge Representation and Clinical Decision Support Systems
- ISSP 2210 Artificial Intelligence
- ISSP 2221 Human Information Processing
- ISSP 2230 Natural Language Processing
- ISSP 2240 Decision Analysis and Decision Support Systems
- ISSP 2250 Research Design
- ISSP 2260 Visual Languages
- ISSP 2400 Intelligent Systems Laboratory
- ISSP 2510 Seminar on Artificial Intelligence and Legal Reasoning
- ISSP 2630 Foundations of Cognitive Science
- ISSP 2710 Medical Expert Systems Seminar
- ISSP 2805 Artificial Intelligence and the Logic of Discovery
- ISSP 2820 Pragmatics
- ISSP 2850 Computational Linguistics
- ISSP 2871 Art of Logic and Computation
- ISSP 2875 Logic Programming and Computational Morphology
- ISSP 2900 Graduate Internship
- ISSP 2902 Directed Study

- ISSP 2990 Independent Study
- ISSP 3000 Research and Dissertation for the PhD Degree
- ISSP 3120 Natural Language Processing
- ISSP 3180 Visual Languages and Visual Programming
- ISSP 3300 Advanced Topics in Expert Systems
- ISSP 3360 Structure and Interpretation of Computer Programs
- ISSP 3370 Artificial Intelligence in Business
- ISSP 3380 Knowledge-based Expert Systems
- ISSP 3390 Advanced Topics in Artificial Intelligence
- ISSP 3520 Theory of Learning Algorithms
- ISSP 3565 Advanced Topics in Artificial Intelligence
- ISSP 3570 Advanced Topics in Computational Rationality
- ISSP 3610 Seminar in Learning and Instructional Processes
- ISSP 3712 Knowledge Representation

LINGUISTICS

CONTACT INFORMATION

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 Fax: (412) 624-6130
 Web site: <http://www.linguistics.pitt.edu>

FACILITIES

The Linguistics Department is directly engaged in language teaching through the Language Laboratory and two institutes:

ENGLISH LANGUAGE INSTITUTE

The English Language Institute offers courses in English as a foreign language to students for whom English is not the native language. Three-credit courses are offered, LING 0008, 0009, 0010, and also non-credit intensive courses in English. The ELI also offers courses for the **School of Engineering** and the Department of English, and conducts proficiency tests of international TA/TFs for the Office of the Provost.

LANGUAGE ACQUISITION INSTITUTE

The Language Acquisition Institute offers instruction in uncommonly taught languages. The languages taught in any given term are determined by availability of native-speaking instructors and materials and availability of funds. In a typical Fall or Spring Term, about 15 languages will be offered to over 275 students. The most popular course is currently American Sign Language; other languages that have been taught recently are Arabic, Aymara, Dutch, Finnish, Modern Greek, Hindi, Hungarian, Indonesian, Irish Gaelic, Korean, Persian (Farsi), Quechua, Swahili, Swedish, Tagalog, Thai, Turkish, and Vietnamese.

LANGUAGE LABORATORY

The Language Laboratory is administered by the Department of Linguistics on behalf of all the language departments.

ADMISSIONS

The department offers programs leading to the MA and PhD degrees. In order to be admitted to graduate standing in linguistics, students must meet the admission requirements of the **Faculty of Arts and Sciences** and have at least two years, or the equivalent, of university-level study of a foreign language. The Graduate Record Examination is strongly recommended for all applicants; it is required for those applying for financial aid. PhD applicants must also submit samples of written work in linguistics.

FINANCIAL ASSISTANCE

Most of the aid offered by the department is in the form of teaching assistantships in the English Language Institute. There are about four to six new positions per year. There are between two and five other assistantships each year, usually involving some sort of administrative or editorial work, and sometimes teaching or teacher supervision; applicants whose native language is not English may be eligible for two or three of these positions. For all assistantships, applicants are mainly ranked on the basis of their academic qualifications, but relevant teaching experience or research can help.

Besides assistantships, there are a limited number of predoctoral fellowships from the Andrew Mellon Foundation and Provost's Humanities Fellowship program, for which PhD applicants in Linguistics are eligible. Applicants should realize that these are very prestigious fellowships, granted on the basis of a University-wide competition. The application deadline is the same as for admission: February 1. *For more information on these fellowships, see Fellowships and Traineeships on page 36 of the FAS section of this bulletin.*

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

The MA program in Linguistics requires students to satisfy course requirements, to demonstrate research proficiency (including a thesis or long paper), and to have proficiency in one foreign language.

COURSE REQUIREMENTS

The MA program requires a minimum of 10 courses (30 credits) chosen in consultation with the departmental graduate advisor. Six core courses are required, including the following five: LING 1950, 2578, 2579, 2773, 2777. For the sixth core course students must take one of the following courses: LING 1443, 2146, 2267, 2441, 2860, 2681, 2682, or 2945.

Additional course work may also be taken outside the department. No more than three courses may be chosen from the 1000 series. The student must earn a B average in graduate linguistics courses in order to receive the MA degree.

RESEARCH PROFICIENCY

This requirement may be satisfied by electing LING 2000, Research and Thesis, and meeting the FAS requirements for the thesis; or the student, with the approval of the departmental faculty, may write a "long paper" under the supervision of a faculty member. The paper will be read by the advisor and at least two other faculty members. Before the long paper has been written, the student must submit a long paper proposal that must be evaluated by a committee of three faculty members. (Consult the graduate advisor for complete details.)

FOREIGN LANGUAGE REQUIREMENT

Proficiency in one foreign language is required for the MA degree. This proficiency should fall into one of two areas: either (1) the ability to do research in sources written in the language: normally the choice would be French, German, Spanish, or Russian; or (2) acquaintance with the sounds and structure of a language, for which any language may be chosen. An examination to ascertain student proficiency in the chosen language will be administered by members of the faculty or by the Language Acquisition Institute.

International students who are not native speakers of English may use English to fulfill the MA language requirement, and the requirement will be fulfilled automatically by the completion of MA course work with a B average.

Comprehensive examinations are not mandatory. A minimum B+ in all core courses (both departmental core and specialization core) is required; students who do not have a B+ will have the option of repeating the course or taking comprehensive examinations in that area.

COURSE REQUIREMENTS FOR SPECIALIZATION IN APPLIED LINGUISTICS

For MA students pursuing a specialty in applied linguistics, the required course work (for a minimum of 30 credits) is described below:

1. 1950 Introduction to Linguistics
2. Core courses in Linguistics (9 credits):
 - 2578 Phonetics and Phonemics
 - 2579 Phonology
 - 2777 Introduction to Syntax
3. Core courses in Applied Linguistics (12 credits):
 - 2139 Approaches and Methods in Second Language Teaching
 - 2144 Research Methods in Applied Linguistics and Sociolinguistics
 - 2146 Second Language Acquisition

At least one course chosen among the following:

 - 2147 Current Issues in Second Language Learning
 - 2149 Special Topics in Applied Linguistics
 - 2267 Sociolinguistics
 - 2945 Psycholinguistics
4. Electives (9 credits)

REQUIREMENTS FOR THE PHD DEGREE

By the end of the third term of doctoral study, the student is expected to have established his/her eligibility to continue toward the degree by passing the required preliminary screening examination.

Two foreign languages are required for the PhD degree. Ordinarily, one of these two languages must be French, German, Spanish, or Russian. Proficiency in these languages will be demonstrated by examination. In addition, the department requires either previous knowledge of, or one term of study with a grade of at least a B in, some language that is not Germanic, Romance, Slavic, or Greek, unless one of the two languages chosen for examination falls into this category.

A comprehensive examination precedes admission to candidacy and dissertation research. This examination covers the following areas: (1) linguistic theory and methodology, including descriptive analysis, and (2) an area of specialization—a particular group of languages, an interdisciplinary area such as Native American linguistics, or a subfield such as sociolinguistics, or second language acquisition. The papers are subject to an oral defense.

Additional information can be found in the General Academic Regulations section of this bulletin and in the department’s Web pages.

REQUIREMENTS FOR THE CERTIFICATE IN TESOL

A Certificate of Advanced Study in the Teaching of English to Speakers of Other Languages (TESOL) is offered by the Department of Linguistics. Candidates for the certificate should be in a graduate program of the University or should have completed a master’s or PhD degree. An application form for admission is obtainable from the department’s admissions officer. LING 1950, Introduction to Linguistics, or an equivalent course is a prerequisite. It may be taken concurrently with the first certificate course in which the candidate enrolls.

Students must take six courses, all of which must be passed with at least a B grade, to fulfill course requirements for the certificate:

- Linguistic Structure of English (LING 1738)
- Approaches and Methods in Second Language Teaching (LING 2139)
- Techniques and Procedures of TESOL (LING 2142)
- Materials Development for Teaching and Testing (LING 2143)
- Second Language Acquisition (LING 2146)
- Practicum in Second Language Teaching (LING 2195)

In addition, the student must take one of the following courses:

- Psycholinguistics (LING 2945)
- Sociolinguistics (LING 2267)
- Current Issues in Second Language Learning (LING 2147)
- Research Methods (LING 2144)

- Special Topics in Applied Linguistics (LING 2149)

(Note that 2945 or 2267 may also count as one of the five required linguistics courses for the MA degree, and all certificate course work counts toward the credit requirements for a graduate degree in linguistics.)

Each candidate who is not a native speaker of English must also achieve a score of 250 or higher (600 or higher on the paper-based test) on the TOEFL examination or its equivalent, and must have good spoken English ability (as determined by an interview test). Native speakers of English must satisfy a foreign language requirement: they must have classroom foreign language experience equivalent to at least one year of college-level study.

Students from outside the Department of Linguistics must complete a TESOL Certificate Plan of Studies form and submit it to the TESOL Certificate advisor after consultation. On completion of all TESOL Certificate requirements, a transcript must be submitted to the Department of Linguistics. The certificate is officially awarded only when the student has also completed all requirements for—or has previously received—the MA or PhD degree and completed an Application for Graduation form.

COURSE LISTINGS

The courses listed below are those taught regularly. Other courses are taught when there is sufficient student interest. Consult the department for a complete list.

LING	0080	Aspects of Language
LING	0090	Language and Computation
LING	1235	Language, Gender, and Society
LING	1240	Language and the Law
LING	1267	Aspects of Sociolinguistics
LING	1442	Mayan Languages and Cultures
LING	1443	American Indian Languages
LING	1444	Gypsy Language and Culture
LING	1930	Introduction to Applied Linguistics
LING	1950	Introduction to Linguistics
LING	1951	Languages of the World
LING	2000	Research and Thesis for the Master’s Degree
LING	2139	Approaches and Methods in Second Language Teaching
LING	2142	Techniques and Procedures in Language Teaching: TESOL
LING	2143	Materials Development for Second Language Teaching and Testing
LING	2144	Research Methods in Applied Linguistics
LING	2146	Second Language Acquisition
LING	2147	Current Issues in Second Language Learning
LING	2190	Seminar: ESL Teacher Supervision
LING	2195	Practicum: Second Language Teaching
LING	2196	Practicum: Second Language Curriculum
LING	2197	Teaching of Linguistics
LING	2234	Language Planning
LING	2267	Sociolinguistics

LING	2269	Current Issues in Sociolinguistics
LING	2441	Field Methods in Linguistics
LING	2450	Structure of an American Indian Language
LING	2578	Phonetics and Phonemics
LING	2579	Phonology
LING	2580	Topics in Phonological Theory
LING	2681	Pragmatics
LING	2773	Morphology
LING	2774	Seminar: Current Issues in Syntax
LING	2777	Syntactic Theory
LING	2860	Introduction to Historical Linguistics
LING	2861	Seminar: Current Issues in Historical Linguistics
LING	2862	History of English Dialects
LING	2902	Directed Study for MA Students
LING	2940	Seminar: Current Issues in Linguistics
LING	2945	Psycholinguistics
LING	2959	Departmental Seminar
LING	2990	Independent Study for MA Students
LING	3000	Research and Dissertation for the PhD Degree
LING	3902	Directed Study for PhD Students
LING	3990	Independent Study for PhD Students

Courses of collateral interest are offered in the foreign language departments, in the Departments of Anthropology, Computer Science, English, Philosophy, Psychology, and Communication, and in the **School of Education** and the **School of Information Sciences**. The facilities of the University's Computing Services and System Development (CSSD) are also useful for certain kinds of research in linguistics.

In addition to the preceding, the department periodically offers specially arranged programs for EFL teachers from abroad.

MATHEMATICS

The Graduate Faculty in the Department of Mathematics offers various opportunities for study and research in mathematics which may be pursued by full-time and part-time students. Cooperative programs exist with other departments in the arts and sciences and with other branches of the University, such as a dual master's program with the Department of Computer Science and a graduate training program on Neuroscience in collaboration with Carnegie Mellon University (Center for the Neural Basis of Cognition). The department also accommodates students engaged in graduate studies in other disciplines requiring mathematics, and serves the community by providing mathematics education to those not necessarily pursuing a graduate degree program. Details on graduate programs and departmental regulations are contained in the document, *Handbook for Graduate Study in Mathematics at the University of Pittsburgh*, obtainable from 309 Thackeray Hall or by telephoning (412) 624-1175.

Degree programs lead to the Master of Arts and Master of Science in Mathematics, Master of Arts and Master of Science in Applied Mathematics, and the Doctor of Philosophy in Mathematics. Within the limitations of course availability, students may study those subjects most suited to their own interests and needs. Successful completion

of one of these programs will prepare the student for employment in a wide variety of specialized occupations or for doctoral work in one of these areas. The MA and MS programs in applied mathematics are more structured in their requirements; the interested student can obtain additional information from the department on their nature.

CONTACT INFORMATION

Department Chair: John M. Chadam
 Main Office: 301 Thackeray Hall
 Phone: (412) 624-1175
 Fax: (412) 624-8397
 Web site: <http://www.math.pitt.edu>

RESEARCH

The research interests of the department are wide and varied. These include algebra, applied analysis, classical and functional analysis, complex variables, ordinary and partial differential equations, geometry and relativity theory, logic and foundations, mathematical finance, mathematical biology, applied mathematics and numerical analysis, and general topology.

FACILITIES

The Mathematics Library contains more than 21,000 volumes and 280 research journals. Computer access to databases such as Mathematical Reviews is available to all students and faculty.

In addition to the extensive computing facilities provided by the University, the department maintains several in-house computing sites for use by all departmental graduate students. Available equipment includes several departmental Unix-based servers, and various Macintosh, Windows-based PCs, and Unix-based PCs. All of these machines are connected to the University's Ethernet network. There is also easy and reliable access to the Pittsburgh Supercomputing Center and its state-of-the-art parallel computers.

ADMISSIONS

Applicants should have a bachelor's degree in Mathematics or a closely related field, a minimum quality point average (QPA) of 3.00 out of a possible maximum of 4.00 in all undergraduate subjects, and a minimum QPA of 3.25 in the mathematics curriculum. It is desirable that the student's background include courses in calculus, linear and abstract algebra, differential equations, and real and complex analysis. Students lacking preparation in some of these subjects may be required to take the appropriate courses to meet the prerequisites for certain graduate courses. Applications may be submitted at any time, but for Fall Term admission should be received by mid January of that year. Three letters of recommendation are required. The submission of GRE scores (including the math subject exam) is optional, but highly encouraged.

FINANCIAL ASSISTANCE

The department supports about 50 graduate students through teaching assistantships, teaching fellowships, research assistantships, and Mellon Fellowships. Approximately 15 to 20 teaching assistantships are awarded to first-year students. *Details on the nature of these awards can be found under Teaching and Research Appointments on page 7 of the FAS section of the bulletin and under Fellowships and Traineeships on page 36 of the FAS section of the bulletin.*

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER’S DEGREE

Departmental requirements for the Master of Arts (MA) degree in Mathematics are the completion of at least eight mathematics courses and an oral comprehensive examination. Five of the eight courses must be taken at the 2000-3000 level; the remaining ones may be those given by the department at the 1000 level or those cross-listed with other departments. As there are no other course requirements, the student may pursue a highly specialized program of study. Equally possible is a more traditional program providing a broader spectrum of subjects. The well-prepared student carrying a full schedule can complete the degree in a year. A Master of Science (MS) option is available that requires a thesis. Full-time students who are also working for the department as Teaching Assistants may require an additional year. Part-time students are allowed up to four calendar years to complete all requirements.

The programs that lead to the master’s degree in Applied Mathematics contain several tracks, each having a selection of required and elective courses. An MS option is available that requires a thesis. The departmental handbook should be consulted for details on these programs. The department also offers a dual-degree program at the master’s level with the Department of Computer Science. The degree objective in such programs is the master’s degree in Mathematics and a master’s degree in some selected other area.

REQUIREMENTS FOR THE PHD DEGREE

The main requirement for the Doctor of Philosophy (PhD) degree in Mathematics is the successful completion and defense of a dissertation embodying a substantial piece of original mathematical research. Prior to embarking upon this research, candidates are expected to pass a comprehensive examination demonstrating their competence in their chosen area of mathematics. Additionally, they must pass a written preliminary examination on advanced linear algebra and multivariable calculus. The preliminary examination must be passed within the first two years of full-time study.

Most candidates will require from three to five years of full-time study to complete the degree. Part-time students may be allowed as many as 10 years to finish all requirements.

Additional information and details concerning examinations, requirements, and the advising system can be found in the departmental handbook.

COURSE LISTINGS

Courses in the 1000 series are advanced undergraduate courses that are frequently suitable for graduate credit. Those in the 3000 series are advanced graduate courses. Course content, prerequisites, frequency of offering, and requirements may change from year to year. Detailed information can be found in the Arts and Sciences *Course Descriptions*, which is published each term prior to registration.

SELECTED 1000-LEVEL UNDERGRADUATE COURSES

MATH	1020	Applied Number Theory
MATH	1050	Combinatorial Mathematics
MATH	1070	Classical Numerical Analysis
MATH	1080	Numerical Linear Algebra
MATH	1100	Numerical Optimization Method
MATH	1110	Industrial Numerical Analysis
MATH	1180, 1240	Linear Algebra 1, 2
MATH	1250	Abstract Algebra
MATH	1270, 1280	Ordinary Differential Equations 1, 2
MATH	1310	Graph Theory
MATH	1330	Projective Geometry
MATH	1350	Introduction to Differential Geometry
MATH	1360, 1370	Modeling in Applied Mathematics 1, 2
MATH	1410, 1420	Introduction to the Foundations of Mathematics 1, 2
MATH	1470, 1480	Partial Differential Equations 1, 2
MATH	1530, 1540	Advanced Calculus 1, 2
MATH	1550	Vector Analysis and Applications
MATH	1560	Complex Variables and Applications
MATH	1570	Transformation Methods in Applied Mathematics
MATH	1700	Introduction to Topology
MATH	1730, 1740	Honors Algebra 1, 2
MATH	1750, 1760	Honors Analysis 1, 2

GRADUATE-LEVEL COURSES

MATH	2000	Research and Thesis for the Master’s Degree
MATH	2030	Numerical Linear Algebra
MATH	2050	Graph Theory
MATH	2060	Combinatorics
MATH	2070, 2071	Numerical Methods in Scientific Computing 1, 2
MATH	2090	Numerical Solution of Ordinary Differential Equations
MATH	2160	Set Theory
MATH	2170	Logic and Foundations
MATH	2180	Introduction to Fractal Geometry
MATH	2200, 2201	Real Analysis 1, 2
MATH	2210, 2211	Complex Analysis 1, 2
MATH	2240	Analytic Number Theory
MATH	2245	Algebraic Number Theory
MATH	2260	Potential Theory
MATH	2280	Hardy Spaces
MATH	2370, 2371	Matrices and Linear Operators 1, 2
MATH	2400, 2401	Functional Analysis 1, 2
MATH	2410, 2411	Harmonic Analysis 1, 2
MATH	2480	Computational Approximation Theory
MATH	2500, 2501	Algebra 1, 2
MATH	2700, 2701	Topology 1, 2
MATH	2750	General Topology

MATH	2800, 2801	Differential Geometry 1, 2
MATH	2810	Algebraic Geometry
MATH	2900, 2901	Partial Differential Equations 1, 2
MATH	2920, 2921	Ordinary Differential Equations 1, 2
MATH	2930	Asymptotics and Special Functions
MATH	2950	Methods of Applied Math
MATH	2960	Computational Fluid Mechanics
MATH	2990	Independent Study
MATH	3000	Research and Dissertation for the PhD Degree
MATH	3031	Network Theory
MATH	3055	Chromatic Polynomials and Graph Structure
MATH	3060	Combinatorics and Finite Fields
MATH	3070	Numerical Solution of Nonlinear Systems
MATH	3071	Numerical Solution of Partial Differential Equations
MATH	3072	The Finite Element Method
MATH	3075	Parallel Finite Element Method
MATH	3090	Directed Study
MATH	3211	Riemann Surfaces
MATH	3215, 3216	Quasiconformal Maps 1, 2
MATH	3220, 3221	Several Complex Variables 1, 2
MATH	3250, 3251	Singular Integral Theory 1, 2
MATH	3260-3262	Topics in Fractal Geometry 1, 2, 3
MATH	3270, 3271	Iteration of Rational Maps 1, 2
MATH	3370	Computational Models in Neurobiology
MATH	3375	Computational Neuroscience
MATH	3410, 3411	Hilbert Spaces of Entire Functions 1, 2
MATH	3450	Theory of Distributions
MATH	3480	Topics in Spline Approximation
MATH	3550	Lie Groups and Lie Algebras
MATH	3750	General Topology 2
MATH	3920	Nonlinear Methods in Differential Equations
MATH	3921	Pseudodifferential Operators
MATH	3930	Fixed Point Theory
MATH	3940, 3941	Applied Analysis 1, 2
MATH	3950	Nonlinear Dynamics, Chaos, and Oscillation
MATH	3951	Physical Methods in Mathematics
MATH	3960	Mathematics of Phase Boundaries

MEDIEVAL AND RENAISSANCE STUDIES

Students of the medieval or Renaissance period of a discipline, whether literature, the fine arts, history, philosophy, music or other fields, have a particular need for a broad base in their training. Recognizing this need, the Medieval and Renaissance Studies Committee of the University of Pittsburgh instituted in 1968-69 a program that aims at stimulating interest in medieval and Renaissance studies generally, facilitating contact and exchange of information and ideas among

faculty and students in various fields of study, and encouraging future medievalists and Renaissance scholars to develop greater breadth in their preparation. An interdisciplinary program with study in departments outside that of the student's major subject can significantly enrich the student's academic work.

The Medieval and Renaissance Studies Program comprises a course of studies leading to the doctorate in one of the conventional disciplines but with a broader and more varied preparation than marks the character of the present PhD in French, history, or other disciplines. Completion of the program leads to a certificate of advanced study in Medieval and Renaissance Studies. Students who wish to specialize in the Middle Ages or Renaissance are permitted to take more courses outside their own department than is otherwise allowed. They might choose two ancillary fields for a minimum of four courses outside the department of their major. All departments participating in the program will permit the substitution of some interdisciplinary courses for regular departmental course requirements. The interdisciplinary nature of the student's work will be reflected in a consequent comprehensive examination and still later in the doctoral dissertation.

CONTACT INFORMATION

Main Office: 1328 G Cathedral of Learning
 Phone: (412) 624-5220
 Fax: (412) 624-6263
 Web site: <http://www.pitt.edu/~medren/>

Director: Daniel Russell

For further information about the program, consult the Director; Medieval and Renaissance Studies Program; 1328 Cathedral of Learning; University of Pittsburgh; Pittsburgh, PA 15260.

Executive Committee: BLUMENFELD-KOSINSKI (French and Italian Languages and Literatures), EDWARDS (Religious Studies), GREENBERG (History), LEWIS (Music), NOVY (English), RUSSELL (French and Italian Languages and Literatures), STONES (History of Art and Architecture)

Affiliated Faculty: ALLEN (Philosophy), BIRNBAUM (Slavic Languages and Literatures), BREIGHT (English), BRUMBLE (English), FAVORINI (Theatre Arts), FRANKLIN (Music), GALPERN (History), GEORGE (Theatre Arts), GILL (Classics), HARRIS (History of Art and Architecture), HEARN (History of Art and Architecture), HEVERLY (Hillman Library), LOONEY (French and Italian Languages and Literatures), MACHAMER (History and Philosophy of Science), MASSEY (History and Philosophy of Science), MILLER (Classics), POSSANZA (Classics), ROBERTSON (English), SEGVIC (Philosophy), TOKER (History of Art and Architecture), TWYNING (English), VENARDE (History), WILKINS (History of Art and Architecture), WILLIAMS (History of Art and Architecture)

LIBRARY RESOURCES

The University of Pittsburgh's Hillman Library holds a strong collection of books dealing with medieval and Renaissance studies. The Department of History of Art and Architecture in particular has one of the best collections of texts and periodicals treating medieval and Renaissance subjects to be found in the United States. Students also have access to the extensive microfilm collection at the Charles Patterson Van Pelt Library of the University of Pennsylvania.

Participation in the Newberry Center for Renaissance Studies on the part of this University makes the holdings of the Newberry Library and the Folger Shakespeare Library available for consultation by students; there are travel grants awarded for this purpose.

SPECIAL FEATURES

Each year, the program organizes a series of lectures and symposia presented by both distinguished visitors and members of the University faculty. The Executive Committee of the program publishes, each term, a newsletter carrying announcements of coming events, fellowship possibilities, upcoming professional meetings of interest, courses to be offered in the following term, and scholarly activity of faculty and graduate students. This publication also provides a forum for the exchange of information among faculty and students at the University and at other colleges and universities in the area.

ADMISSIONS

For admission, a student already holding an MA will declare to the major advisor in the department where he or she plans to obtain a conventional PhD an intention to work for the additional Certificate of Advanced Study in Medieval and Renaissance Studies. This declaration of intent must normally be made during the first year of the student's work toward the PhD.

The student should have, or acquire not later than the end of the first year of study, a working knowledge of Latin in addition to the modern languages required by the student's home department.

FINANCIAL ASSISTANCE

Students in the program are eligible for assistantships and fellowships in the department of their specialization. Application forms are available from the various departments.

REQUIREMENTS FOR THE CERTIFICATE

The Certificate of Advanced Study in Medieval and Renaissance Studies has language proficiency, course work, and research requirements as detailed below:

LANGUAGE PROFICIENCY

Proficiency in Latin and at least one modern language is required. Proficiency will ordinarily be interpreted as the ability to conduct research projects involving use of material in those languages. The language examinations will be administered by members of the committee from the appropriate language department and will usually consist of the translation of critical essays in the modern languages and, in the case of Latin, of a selection from an appropriate document in medieval or Renaissance Latin.

COURSE WORK

Six approved courses or seminars, ordinarily in three departments, are required. The courses will not be selected heterogeneously but will follow a definite pattern of interrelated studies. For instance, a student majoring in French may wish to pursue an interest in the Norman dialect by taking a course in the Department of English on the effect of the Norman invasion on the development of the English language and literature; the same student may also take a course from the Department of History of Art and Architecture on Anglo-Norman architecture. Four of those courses will be taken in at least two departments other than the student's major.

RESEARCH REQUIREMENTS

A research paper in medieval and Renaissance studies is required of all students working for the certificate. The paper will reflect the student's multidisciplinary interests. The director of the research project may either be the major advisor or a member of the committee who would be professionally qualified to advise the student; for example, a paper on Anglo-Norman architecture would certainly be directed by a member of the Department of History of Art and Architecture. The paper will be defended before an interdisciplinary colloquium and also may fulfill degree requirements.

Upon completion of these requirements, the major advisor will place in the student's file a report on the special nature and interests of the student's work toward the certificate, for example, medieval Anglo-Norman culture or the interrelationship of theology and literature in Renaissance Germany. The report can serve as a supplement to the student's professional job placement.

COURSE LISTINGS

The following departments offer courses that may be included in a Medieval and Renaissance Studies course of study: Classics, English, French and Italian, German, History, History of Art and Architecture, History and Philosophy of Science, Music, Religious Studies, Slavic, and Theatre Arts. Selection of specific courses should be made with the advice and approval of an academic advisor in the department of the major.

In addition to graduate work, the program offers upper-level undergraduate courses that graduate students from different disciplines sometimes find useful to audit or take for credit, with a view to broadening their interdisciplinary background.

MUSIC

The Department of Music offers a stimulating environment in which to make music through composition, improvisation, and performance, to explore music's meaning in the structure of individual works and in the relations between them, and to study the function and meaning of music within its social, cultural, and historical contexts. Toward that end, the department offers the Master of Arts and Doctor of Philosophy in Music with programs in three fields of study: composition and theory, ethnomusicology, and historical musicology. Although the curriculum in each field is specialized, the faculty and students work closely together, and the programs are closely interconnected through a series of interdisciplinary proseminars.

CONTACT INFORMATION

Department Chair: David Brodbeck
Main Office: 110 Music Building
Phone: (412) 624-4126
Fax: (412) 624-4186
Web site: <http://www.pitt.edu/~musicdpt/>

PROGRAM IN COMPOSITION AND THEORY

The program of study in composition and theory is based upon the premise that the invention and analysis of music are related activities. The curriculum stresses training in the craft of composition (individual instruction forms a large part of the course work) while developing in the student a broad knowledge of the contemporary repertory and an ability to formulate abstractions from existing music.

The department's resources include an electroacoustic music studio. Digital recording equipment and computer notation programs and facilities are available.

The department actively promotes the performance of new music through its concert series "Music on the Edge," which has featured such professional musicians and ensembles as the Pro Arte Quartet, the Lion's Gate Trio, violinist Rolf Schulte, and the California E.A.R. Unit. All degree candidates in composition and theory are assured of the public performance of at least one work in each academic year.

PROGRAM IN ETHNOMUSICOLOGY

The program of study in ethnomusicology prepares scholars for research and teaching. The training includes a thorough study of the history and theory of the discipline, methods and techniques of research, cultural theory, a general exposure to world music, a specialized study of one or more particular repertoires and/or the musical behavior of one particular cultural entity, and faculty guidance in original research. The program is especially strong in African music, African-American music, American music, Chinese music, global popular music, jazz, and the music of Southeast Asia. The program maintains a balance between the humanistic and social sciences perspectives.

The ethnomusicology program is supported by a computer-assisted musical analysis laboratory. The department owns the Cunningham Collection of world musical instruments; a large Javanese gamelan consisting of about 40 instruments, mostly gongs and gong chimes; Chinese string and wind instruments; and a large collection of West African percussion instruments.

Students have an opportunity to participate in a variety of performing groups, including the African Drumming Ensemble and the Javanese Gamelan Ensemble. The Jazz Ensemble offers composing, performing, and arranging experience for students studying jazz. The annual Jazz Seminar brings internationally noted performers to the University for a week of conferences and performances.

Students in ethnomusicology benefit also from the University's strong Area Studies programs, particularly Asian Studies, Latin American Studies, and Russian and East European Studies. Moreover, in collaboration with the Indian Council for Cultural Relationships, the department brings leading musicians from India to campus each year for concerts, lectures, and workshops.

PROGRAM IN HISTORICAL MUSICOLOGY

The program of study in historical musicology reflects the wide-ranging interest and diverse methodological approaches of the faculty. The curriculum combines training in the primary tools of the discipline—including criticism and analysis, codicology and source study, and historical performance practices—with the study of music in its larger cultural and societal contexts. Accordingly, the program is not bound solely to the study of music from the Western art-music tradition; students may choose to work on topics in American, popular, and traditional musics as well.

The primary resources for the program include the Theodore M. Finney Music Library, located in the Music Building, and the Art and Music Division of the nearby Carnegie Library of Pittsburgh. Both libraries contain a general music research collection. They also have several collections of important primary materials, including early American

hymnals and tunebooks, binder's volumes of sheet music with regional significance, 17th- and 18th-century manuscripts and prints of English sacred and secular works, and many printed editions dating from 1550 to 1800. The Music Library contains the music from the estates of Ethelbert Nevin, Adolf Forster, Fidelis Zitterbart, and William Steinberg. In addition, the Foster Hall Collection in the Stephen Foster Memorial contains one of the most significant repositories of 19th- and early 20th-century American music in the country.

ADMISSIONS

An application to the MA or PhD program must contain each of the following components:

- The application form (two copies).
- Official transcripts of all undergraduate and graduate work (two copies).
- At least three letters of recommendation.
- Certified scores on the Graduate Record Examination, including the verbal, quantitative, and analytical section scores, as well as those of the music subject examination. (The GRE must be taken in October or December; scores for examinations taken in April will not arrive in time to be considered.)
- At least two papers on an analytical, historical, or theoretical topic; applicants in composition and theory should submit at least two scores and (if possible) tapes of recent compositions, together with one paper on an analytical or theoretical topic.

APPLICATION DEADLINES

Applicants who wish to be considered for financial assistance must ensure that their application and all supporting materials have arrived at the Department of Music no later than February 1. Candidates who do not wish to be considered for financial assistance may apply for admission in the Fall Term no later than March 15.

Mid-year Applications: The department discourages admission in the Spring Term but will consider it under special circumstances. Financial assistance is not generally available for students entering the program in the Spring Term. Prospective applicants who wish to be admitted in mid-year should discuss their circumstances with the Director of Graduate Studies. The closing date for applications for admission in the Spring Term is November 1.

FINANCIAL ASSISTANCE

The department makes every effort to offer financial assistance to all worthy applicants. Some awards are made by the **Faculty of Arts and Sciences** on the basis of interdepartmental competition among all applicants. Teaching fellowships and teaching assistantships fall under the jurisdiction of the department. Most fellowships and assistantships are renewable on a year-to-year basis. In recent years, students in good standing have continued to receive support through the third year of study.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations

beginning on page 17, and any additional requirements of *FAS Graduate Studies* described under *FAS Degree Requirements* on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

At the master's level, students in all three programs enroll in a common series of proseminars. These are basic courses that deal largely with methods in scholarly research and provide the student with an introduction to the various disciplines represented within the department. The series comprises:

Music 2111 Principles of Research and Bibliography
 Music 2121 Introduction to Ethnomusicology
 Music 2131 Introduction to Historical Musicology
 Music 2141 Musical Analysis

Much of the remainder of the curriculum at the master's level consists of more specialized courses. Students in Composition and Theory select private tutorials in composition and analysis and practical courses in orchestration and electroacoustic music; students in Ethnomusicology select from both area courses and seminars and topical courses and seminars; students in Historical Musicology select from topical seminars.

COMPOSITION AND THEORY REQUIREMENTS

The following requirements are for students in composition and theory:

- Completion of 30 credits of course work (including a thesis), distributed as follows:
 - 1) Four proseminars (12 credits)
 - 2) Three terms of Composition and Analysis Tutorial (Music 2631) (9 credits)
 - 3) Two additional courses, selected from Instrumentation and Orchestration (Music 1431), Electronic and Computer Music (Music 1441/1442), or any graduate courses either within or outside the Department of Music (6 credits)
 - 4) Three credits in preparation of the MA thesis (Music 2000). Candidates for the MA submit a composition with an accompanying essay as their thesis. Doctoral students permitted to bypass the MA must substitute an elective for this course.

ETHNOMUSICOLOGY REQUIREMENTS

The following requirements are for students in ethnomusicology:

- Completion of 30 credits of course work (including a thesis), distributed as follows:
 - 1) Four proseminars (12 credits)
 - 2) Two area courses and seminars (6 credits)
 - 3) One topical course or seminar (3 credits)
 - 4) One term of Ethnomusicology Seminar (3 credits)
 - 5) One course (numbered 1000 or higher) in anthropology or other related discipline (3 credits)
 - 6) Three credits in preparation of the MA thesis (Music 2000). Candidates for the MA degree submit a master's thesis, equivalent in size and scope to a publishable scholarly article. Doctoral students permitted to bypass the MA must substitute an elective for this course.

HISTORICAL MUSICOLOGY REQUIREMENTS

The following requirements are for students in Historical Musicology:

- Completion of 30 credits of course work (including a thesis), distributed as follows:
 - 1) Four proseminars (12 credits)
 - 2) Three topical seminars in historical musicology (9 credits)
 - 3) Two other graduate courses either within or outside the Department of Music (6 credits)
 - 4) Three credits in preparation of the MA thesis (Music 2000). Doctoral students permitted to bypass the MA must substitute an elective for this course.
- Completion of a Language Requirement. For the MA degree, a reading knowledge of German, French, Italian, or Latin is required. In special circumstances, another language may be substituted.

REQUIREMENTS FOR THE PHD DEGREE

Forty-two additional credits are required beyond the 30 required for the MA degree, of which a maximum number of six credits may be in guided reading in preparation for the comprehensive examination (Music 2990) and a maximum number of 18 credits may be in preparation of the doctoral dissertation (Music 3000). The 42 credits may consist of any graduate courses or any courses of individually directed study within or outside the Department of Music, chosen in consultation with the major advisor.

PhD candidates must also satisfy the following requirements (distinctions between the various program requirements are detailed):

LANGUAGE REQUIREMENT

Composition and Theory: For the PhD degree, a reading knowledge of one language besides English, chosen in consultation with the major advisor, is required.

Ethnomusicology: For the PhD degree, a reading knowledge of one language besides English relevant to the field of specialization, chosen in consultation with the major advisor, is required.

Historical Musicology: For the PhD degree, a reading knowledge of two languages besides English is required; one of the two languages must be German.

PRELIMINARY EVALUATION

A formal evaluation of each student, intended to identify those students who may be expected to complete the PhD degree as well as to reveal areas of weakness in the student's preparation that need to be remedied, is made at the end of the first year in residence.

COMPREHENSIVE EXAMINATION

Composition and Theory: A written comprehensive examination in analysis, 20th-century musical language, and instrumentation and orchestration, normally taken during the third year in residence, serves as the examination for admission to doctoral study.

Ethnomusicology: A written comprehensive examination in the history, theory, and methodology of ethnomusicology, world music, and analysis, normally taken during the third year in residence, serves as the examination for admission to doctoral study.

Historical Musicology: A written comprehensive examination in the history of Western music and in musical analysis, normally taken during the third year in residence, serves as the examination for admission to doctoral study.

ADMISSION TO CANDIDACY FOR THE PhD DEGREE

After passing the comprehensive examination, each student seeking admission to candidacy for the PhD degree prepares a written prospectus of the dissertation for presentation to the doctoral committee at a formal prospectus or dissertation overview meeting.

DISSERTATION

Composition and Theory: Candidates for the doctorate submit a dissertation in two parts, comprising a major work of original scholarship in music theory and a large-scale composition.

Ethnomusicology or Historical Musicology: Candidates for the doctorate submit a dissertation, a major work of original scholarship.

FINAL ORAL EXAMINATION

A public defense of the dissertation is required.

NOTE: A more detailed description of the graduate program is available upon request. Interested students should contact the Department of Music at the address and phone number given at the beginning of this entry.

COURSE LISTINGS

MUSIC	1320	Music in North America
MUSIC	1326	African-American Music in the United States
MUSIC	1332	Music in Latin America
MUSIC	1340	Music in Africa
MUSIC	1352	Music in Southeast Asia
MUSIC	1354	Music in East Asia
MUSIC	1396	Music in Society
MUSIC	1431	Instrumentation and Orchestration
MUSIC	1441	Electroacoustic Music 1
MUSIC	1442	Electroacoustic Music 2
MUSIC	1731	Jazz Arranging 1
MUSIC	1732	Jazz Arranging 2
MUSIC	1741	Jazz Improvisation 1
MUSIC	1742	Jazz Improvisation 2
MUSIC	2000	Research and Thesis for the Master's Degree
MUSIC	2111	Bibliography and Research Techniques
MUSIC	2121	Introduction to Ethnomusicology
MUSIC	2131	Introduction to Historical Musicology
MUSIC	2141	Music Analysis
MUSIC	2222	Seminar in Medieval Music
MUSIC	2223	Seminar in Renaissance Music
MUSIC	2224	Seminar in Baroque Music
MUSIC	2226	Seminar in Classical Music
MUSIC	2228	Seminar in Romantic Music
MUSIC	2230	Seminar in 20th-century Music
MUSIC	2240	Seminar in Jazz History and Criticism
MUSIC	2320	Seminar in North American Music

MUSIC	2326	Seminar in African-American Music
MUSIC	2340	Seminar in African Music
MUSIC	2352	Seminar in Southeast Asian Music
MUSIC	2354	Seminar in Chinese Music
MUSIC	2441	Transcription and Analysis
MUSIC	2442	Field and Lab Methods
MUSIC	2471	Tonal Analysis
MUSIC	2484	Problems in Theory
MUSIC	2512	Seminar in Historiography
MUSIC	2513	Seminar in Source Studies
MUSIC	2515	Seminar in Performance Practice
MUSIC	2517	Major Composer
MUSIC	2611	Musicology Seminar
MUSIC	2621	Ethnomusicology Seminar
MUSIC	2631	Composition and Analysis Tutorial
MUSIC	2632	Composition Seminar
MUSIC	2990	Independent Study
MUSIC	3000	Research and Dissertation for the PhD Degree
MUSIC	3902	Directed Study

NEUROSCIENCE

The Center for Neuroscience (CNUP) Training Program is an interschool PhD program offered cooperatively by the **School of Medicine** and the **Faculty of Arts and Sciences**. Neuroscience is the study of the structure and function of the nervous system, especially the brain. The field has emerged during the past two decades as a separate discipline, much as biochemistry and endocrinology became separate disciplines within the biomedical sciences in earlier decades. By now, the study of mind and brain is arguably the most exciting scientific enterprise of this time.

Understanding the nervous system provides key insights into human nature as well as treatments for a host of devastating neurologic and psychiatric disorders. The program introduces students to the fundamental issues and experimental approaches in neuroscience and trains them in the theory and practice of laboratory research.

The CNUP is a campus-wide organization that promotes research and related academic activities in a large neuroscience community, and it is important to note that a major feature of the program is the extensive collaborative interactions among its faculty. The field of neuroscience attracts people from many different disciplines in the natural sciences, and this heterogeneity in background is exploited by the diverse approaches taken by the faculty to research problems of common interest.

CONTACT INFORMATION

1448 Biomedical Science Tower
 Phone: (412) 648-9537
 Fax: (412) 648-1441
 E-mail: blaney@brain.bns.pitt.edu
 Web site: <http://www.pitt.edu/~cnup>

RESEARCH

Research interests of the training faculty focus on several prominent themes:

- (a) The molecular basis of cellular communication. Research programs investigate synaptic efficacy and neurotransmitter release, neurotransmitter receptor structure, intracellular signaling cascades, and the neuroplasticity seen in the recovery of function after brain damage and in learning.
- (b) Neural development. Research programs study the mechanisms that contribute to the formation of the brain and spinal cord, such as pattern formation, neuronal and glial differentiation, cell migration, axon guidance, and synapse formation.
- (c) The pathophysiological events associated with psychiatric and neurological disorders. These include investigations of basic mechanisms of cell death and the etiology and treatment of schizophrenia, Alzheimer's Disease, Parkinson's Disease, neurodevelopmental disorders, neuromuscular disorders, and AIDS.
- (d) Cognitive neuroscience. Research programs study visual perception, learning and memory, neuropsychiatry, and brain imaging.
- (e) Information processing in brain circuits. Research programs investigate motor function in cortical and subcortical circuits, and mechanisms of sensory processing in the visual, somatosensory, auditory and vestibular systems, with a focus on thalamocortical, cortico-cortical, and brainstem circuits.
- (f) Homeostatic regulatory systems that maintain the internal milieu by integrated physiological and behavioral processes coordinated by the brain. Research programs study ingestive behavior, neuropeptide synthesis and release, control of the cardiovascular, digestive, and vestibular systems, and autonomic function.

ADMISSIONS

Students are admitted into the CNUP Training Program on the assumption that they will be able to meet all requirements for the PhD degree. Those who are selected show evidence of a high level of intellectual talent, a strong interest in neuroscience, and a commitment to scholarship and research.

Admission decisions are based on many factors including the candidate's statement of interest and goals in the field of neuroscience, evidence of research experience and accomplishment, letters of recommendation, test scores, grades, and personal interviews. An outstanding record in one of these areas may compensate for poorer performance in another area. In general, successful applicants have a BS degree in neuroscience, biology, chemistry, or psychology with a cumulative grade point average of at least 3.50 (on a 4.00 scale), and a score of at least 1950 on the Graduate Record Exam (verbal, quantitative, and analytical).

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS

Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

The requirements for the PhD degree in neuroscience include the following required course work:

INTBP 2000 Foundations of Biomedical Science (8 cr)
INTBP 2005 Foundations Conference (4 cr)

or

MSNBIO/NROSCI 2100 Cell & Molecular Neurobiology (7 cr)
MSNBIO/NROSCI 2101 Cell & Molecular NB Conf (2 cr) and
MSNBIO/NROSCI 2102 Systems Neurobiology (4 cr)
MSNBIO/NROSCI 2103 Systems NB Conf (2 cr)
INTBP 2020 or BIOS 2041 Intro to Statistical Methods 1 (2 cr)

In addition to University requirements for graduate degrees, students are also required to pass a reprint exam following their first year of study, to obtain research experience in at least two separate laboratories (either done initially as research rotations or later as a research apprenticeship), to serve as a Teaching Assistant for at least one term (or course), and to complete a series of workshops on professional ethics and professional development.

FINANCIAL ASSISTANCE

All students are supported in full from University fellowships and numerous grants funded by the federal government and private agencies. Students in the program also have access to sponsorship on NIH training grants.

PHILOSOPHY

The Department of Philosophy, together with the affiliated Center for the Philosophy of Science and in cooperation with the Department of History and Philosophy of Science, offers advanced degree programs leading to the MA and PhD degrees. The department is especially strong in the areas of epistemology, ethics, Greek philosophy, history of philosophy, mathematical and philosophical logic, metaphysics, political and social philosophy, history and philosophy of science, philosophy of language, philosophy of mathematics, philosophy of mind and psychology, and semantics. Its faculty, which represents a wide diversity of interests and backgrounds, has designed the graduate programs so as to allow students substantial flexibility in planning their programs of study. Students have considerable freedom in deciding which areas to combine with a chosen area of specialization in meeting the degree requirements. Students who are especially interested in the Department of History and Philosophy of Science should consult that department's entry in this bulletin.

CONTACT INFORMATION

Department Chair: Stephen Engstrom
Main Office: 1001 Cathedral of Learning
Phone: (412) 624-5768
Fax: (412) 624-5377
Web site: <http://www.pitt.edu/~philosop/philosophy.html>

THE CENTER FOR PHILOSOPHY OF SCIENCE

The Center for Philosophy of Science is intimately linked with the Department of Philosophy but includes members of several other departments. It affords an opportunity to study the philosophy and logic of the sciences. The Center promotes research in collaboration with scholars at other institutions and contributes to the education of doctoral and post-doctoral students specializing in the philosophy and history of science. In the interest of a wider diffusion and appreciation of the subject, the Center sponsors a series of annual public lectures by eminent scholars.

PROGRAM IN CLASSICS, PHILOSOPHY, AND ANCIENT SCIENCE

The Departments of Classics, Philosophy, and History and Philosophy of Science of the University of Pittsburgh jointly offer a graduate program leading to the degrees of Master of Arts and Doctor of Philosophy with a special concentration in Classics, Philosophy and Ancient Science. Although each student's primary association is with one of the three departments, depending on background and interests, students in the program work closely with each other and with the cooperating faculty, which is drawn from all three departments. Further information about this program can be obtained by writing to the Director, Program in Classics, Philosophy, and Ancient Science; 1518 Cathedral of Learning; University of Pittsburgh; Pittsburgh, PA 15260 or upon application to one of the three departments.

THE DEPARTMENT OF HISTORY AND PHILOSOPHY OF SCIENCE

The Department of History and Philosophy of Science at the University of Pittsburgh offers courses and seminars leading to the MA and PhD degrees. They are designed to give students an opportunity to acquire those specialized skills requisite to an understanding of science as an intellectual, cultural, and historical force. The course offerings are diversified, and normal course work is supplemented by a series of seminars on special topics of interest. *See History and Philosophy of Science on page 92 for detail on the department.*

It is possible for students in the Department of Philosophy to work out a combined program with the Department of History and Philosophy of Science, for which there are special degree requirements. The Departments of Philosophy and History and Philosophy of Science work closely together in offering courses and seminars.

ADMISSIONS

To undertake graduate work in philosophy, a student normally must have done superior work in upper-division courses in philosophy totaling not less than 18 credit hours. Exceptions are made in the case of outstanding students who have completed strong majors in other fields. In addition to certified transcripts of all prior undergraduate and graduate work, applicants must include certified scores on the aptitude parts of the Graduate Record Examination, letters of recommendation, and a sample of written work. Full details may be obtained from the Director of Graduate Studies.

Admissions to the PhD program are made once yearly, in February, for entry the following September. The department accepts only full-time students. Admission is highly competitive; in recent years fewer than ten per cent of applicants have been offered admission. Admission to the terminal MA program is made a month before the start of the

Fall and Spring Terms. The department welcomes students in other doctoral programs at the University who wish to take a secondary MA in Philosophy. The department admits other students only if places are available after doctoral students have been admitted.

FINANCIAL ASSISTANCE

Many students in the PhD program are supported by teaching assistantships or fellowships. The rates are set annually by the University. *See Teaching and Research Appointments on page 35 and Fellowships and Traineeships on page 36 for details.* The department does not offer financial support to terminal MA students.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

The University requirement for the degree is eight courses (24 credits), of which at least four courses must be at the graduate level.

The Director of Graduate Studies advises incoming graduate students in planning their programs of studies. Departmental requirements are fully spelled out in the Handbook of Rules and Policies for Graduate Study in Philosophy at the University of Pittsburgh, which may be obtained from the department. In summary, these requirements include:

- (i) proficiency in French, German, Greek, or Latin, shown by passing a departmental translation examination (waived for secondary MA students)
- (ii) proficiency in basic logic, normally shown by passing (with a grade of at least B) PHIL 1500
- (iii) proficiency in metaphysics and epistemology, and either ethics or philosophy of science, shown by passing (with a grade of at least B+) the core courses PHIL 2400 and either 2300 or 2600
- (iv) proficiency in the history of philosophy, shown by doing two units as specified in the *Handbook*

REQUIREMENTS FOR THE PhD DEGREE

The University requirement for the PhD degree is 72 credits. The department requires that 48 of these credits must be obtained by taking 16 approved graduate seminars (including directed studies) passed with a grade of at least B, and the remainder are typically satisfied by dissertation research.

The Director of Graduate Studies advises incoming students in planning their program of studies. Departmental requirements are fully spelled out in the *Handbook of Rules and Policies for Graduate Study in Philosophy at the University of Pittsburgh*, which may be obtained from the department. In summary, these requirements include:

- (i) proficiency in French, German, Greek, or Latin, shown by passing a departmental translation examination
- (ii) proficiency in basic and advanced logic, normally shown by passing (with a grade of at least B) PHIL 2500

- (iii) proficiency in ethics, metaphysics and epistemology, and philosophy of science, shown by passing (with a grade of at least B+) the core courses PHIL 2300, 2400, and 2600
- (iv) proficiency in the history of philosophy, shown by doing four units as specified in the *Handbook*

When these requirements are completed, which should be by the end of the third year of full-time graduate study, the student's performance will be subject to comprehensive evaluation by the full faculty of the department. If the evaluation is favorable, the student presents a prospectus for a dissertation. If the prospectus is acceptable to the proposed dissertation committee, the student is admitted to PhD candidacy. The student must then write and submit a dissertation which the committee considers acceptable for examination, and must pass a final oral examination on the dissertation and his/her research.

TEACHING INTERNSHIP

In order to qualify for the PhD degree, each graduate student must teach, under the supervision of the faculty, at least three one-hour discussion sections distributed over at least two different courses. Teaching Assistants and Teaching Fellows satisfy this requirement in the course of fulfilling their teaching duties. Special arrangements are made to enable other graduate students to satisfy this requirement.

COURSE LISTINGS

Courses numbered in the 1000s are advanced undergraduate courses. With the consent of the departmental Director of Graduate Studies, these courses may be taken by graduate students who are not yet ready for seminar work in the area concerned. A complete list of these courses can be found in the *CAS Bulletin*. They do not count towards the 16 required graduate seminars.

Courses numbered in the 2000s are intended primarily for graduate students. The following courses are usually offered in rotation over a period of two or three years. The core courses and advanced logic (2300, 2400, 2600, and 2500) are offered every year, either in the Fall or Spring Term. The department prepares detailed descriptions of each term's course offerings; these details are available from the department about two months before the beginning of each term. Students not having graduate standing in the Department of Philosophy should secure the instructor's consent before registering for any of the following courses.

PHIL	2010	Presocratic Philosophy
PHIL	2011	Studies in Presocratic Philosophy
PHIL	2020	Plato
PHIL	2021	Studies in Plato
PHIL	2040	Aristotle
PHIL	2041	Studies in Aristotle
PHIL	2050	Topics in History of Philosophy
PHIL	2060	Hellenistic Philosophy
PHIL	2061	Studies in Hellenistic Philosophy
PHIL	2070	Ancient Philosophy
PHIL	2071	Studies in Ancient Philosophy
PHIL	2075	Topics in Ancient Philosophy
PHIL	2080	Medieval Philosophy
PHIL	2081	Studies in Medieval Philosophy
PHIL	2100	Hobbes

PHIL	2110	Descartes
PHIL	2120	Spinoza
PHIL	2130	Leibniz
PHIL	2140	Locke
PHIL	2150	Berkeley
PHIL	2160	Hume
PHIL	2170	Kant
PHIL	2171	Kantian Ethics
PHIL	2172	Analytical Kantianism
PHIL	2180	Hegel
PHIL	2190	Nietzsche
PHIL	2195	Dewey
PHIL	2196	James
PHIL	2200	Frege
PHIL	2210	Wittgenstein
PHIL	2220	Heidegger
PHIL	2221	Being and Time
PHIL	2230	Marx
PHIL	2300	Ethics (core course)
PHIL	2305	Topics in Ethics
PHIL	2310	Moral Theory
PHIL	2315	Moral Psychology
PHIL	2316	Ethics and Public Life
PHIL	2317	Environmental Ethics
PHIL	2320	Social Philosophy
PHIL	2330	Political Philosophy
PHIL	2335	Topics in Contemporary Philosophy
PHIL	2340	Philosophical Perspectives on Feminism
PHIL	2370	Aesthetics
PHIL	2380	Rational Choice
PHIL	2381	Decision Theory
PHIL	2382	Topics in Decision Theory
PHIL	2385	Rationality
PHIL	2390	Philosophy of Law
PHIL	2391	Topics in Philosophy of Law
PHIL	2400	Metaphysics and Epistemology (core course)
PHIL	2420	Philosophy of Language
PHIL	2421	Topics in Philosophy of Language
PHIL	2430	Singular Reference
PHIL	2440	Philosophy of Mind
PHIL	2445	Philosophy of Action
PHIL	2460	Epistemology
PHIL	2470	Philosophy of Religion
PHIL	2480	Metaphysics
PHIL	2481	Metaphilosophy
PHIL	2500	Advanced Logic (core course)
PHIL	2501	Advanced Logic 2
PHIL	2505	Topics in Philosophical Logic
PHIL	2510	Topics in Logic
PHIL	2530	Set Theory

PHIL	2533	Descartes
PHIL	2540	Model Theory
PHIL	2580	Philosophy of Mathematics
PHIL	2590	Mathematics for Foundations
PHIL	2600	Philosophy of Science (core course)
PHIL	2620	Philosophy of Social Science
PHIL	2621	Recent Topics in Philosophy of Social Science
PHIL	2625	Recent Topics in Philosophy of Science
PHIL	2626	Recent Topics in Philosophy of Physics
PHIL	2627	Philosophy of Quantum Mechanics
PHIL	2630	Cultural, Social, and Psychological Explanation
PHIL	2640	Philosophy of Psychology
PHIL	2646	Carnap and Reichenbach
PHIL	2650	Philosophy and Psychoanalysis
PHIL	2651	Philosophy and Psychoanalysis 2
PHIL	2655	Aristotelian and Tractarian Philosophy of Science
PHIL	2660	Philosophy of Space and Time
PHIL	2665	Laws of Nature
PHIL	2670	Contemporary Falsification
PHIL	2675	Scientific Explanation
PHIL	2680	Scientific Realism
PHIL	2681	Realism
PHIL	2690	Theories of Confirmation
PHIL	2699	Experiment and Scientific Practice
PHIL	2700	Science and Religion
PHIL	2703	Topics in Philosophy of Law
PHIL	2800	Zoological Philosophy
PHIL	2810	Philosophical Ethology
PHIL	2900	Teaching Philosophy
PHIL	2902	Pre-MA Directed Study
PHIL	2990	Independent Study
PHIL	2999	Prospectus Research
PHIL	3000	Research and Dissertation for the PhD Degree
PHIL	3902	Post-MA Directed Study

PHYSICS AND ASTRONOMY

The Department of Physics and Astronomy offers a PhD, a PhD with an Area of Concentration in Applied Physics or an Area of Concentration in Chemical Physics, and an MS. The graduate program provides a broad experimental, observational, and theoretical foundation upon which students build careers as scientists prepared for both teaching and research.

CONTACT INFORMATION

Department Chair: David Jasnow
 Main Office: 100 Allen Hall
 Phone: (412) 624-9066 or 624-9000
 Fax: (412) 624-9163
 E-mail: gradsec+@phyast.pitt.edu
 Web site: <http://www.phyast.pitt.edu/>

RESEARCH

A program of graduate studies leading to the PhD requires the submission and acceptance of a PhD thesis presenting a significant independent project that advances knowledge or techniques in the field. It is usually desirable to join an existing research group, either within the department or in another department that does research that is appropriate for a thesis in physics or astronomy. Below is a description of some of the areas of research, both theoretical and experimental, that are currently available within the department.

ASTRONOMY AND ASTROPHYSICS

The department has programs in extragalactic astronomy and cosmology, stellar astrophysics, and astrometry. Astrophysicists, with expertise in extragalactic astronomy and cosmology, study the large-scale structure and evolution of the universe and galaxies. They conduct programs to discover and study quasars and active galactic nuclei by using observations and models. In other observational programs, X-ray, UV, optical, and IR studies using the most powerful and modern telescopes have been made at leading observatories. The department's work with the Sloan Digital Sky Survey will clarify the understanding of the evolution of the universe. Development of novel state-of-the-art techniques will help us to identify and understand new populations of stars, galaxies, and astronomical phenomena. Astrometric studies made at the University of Pittsburgh's Allegheny Observatory include trigonometric parallax studies and searches for planets outside the solar system.

ATOMIC, MOLECULAR, AND OPTICAL PHYSICS

The research activities in experimental Atomic Physics range from fundamental studies of quantum dynamics to basic studies of atomic collisions and atmospheric physics. The department's theoretical atomic physicist studies interactions of photons with atoms and ions. The department's research program in aeronomy seeks to elucidate thermospheric wind patterns in the upper atmospheres of Earth. Experimental investigations are conducted on electron-ion recombination reactions between thermal electrons and molecular ions. Aeronomical field work, such as ground-based and rocket-based ultraviolet spectroscopy of measurements of emissions from the upper atmosphere, auroras, and from the bow shocks of re-entering space craft, provides a wealth of information on the chemical and physical processes in the atmosphere.

CONDENSED-MATTER AND SOLID STATE PHYSICS

Experimental research activities range from nonlinear physics and fluid turbulence, to excitonic condensation in semiconductors, to domain wall kinetics, to materials physics, and to surface science. Theoretical research ranges from dissipation in quantum systems, to disordered systems, to pattern forming dynamics, to the behavior of complex fluids. Semiconductor and solid-state research includes such activities as exploring two- and three-dimensional Bose-Einstein condensation in excitonic systems, imaging research, and investigations of silicon carbide semiconductors. Electronic and optical properties of materials at nanometer length scales are explored by confocal scanning optical microscopy and an apertureless near-field scanning optical microscope that allows the visualization of domain motion at nearly atomic length scales. Multi-disciplinary research is performed at the Surface Science Center using a wide range of surface physics and chemistry experiments which use newly developed probes for studying metallic semiconductors and insulator substrates. Experiments on low dimensional fluid turbulence, on instabilities in complex fluids, and of biologically motivated systems are all part of experimental research activities in soft condensed-matter physics. Condensed-matter theory

ranges from statistical mechanics to cosmology, including disordered (random) systems, phase transitions in non-equilibrium systems, non-equilibrium growth phenomena in phase separating complex systems, interface dynamics, “natural history” from the nonlinear dynamics perspective, dissipation in quantum systems, and applications of the real-time approach to expansion in cosmology.

GENERAL RELATIVITY

Theoretical research includes the search for the quantum theory of the gravitational field (quantum gravity), the study of the behavior of families of light rays in curved space-times, and the development of computational tools to simulate how binary black holes inspiral, merge, and emit gravity waves.

HIGH-ENERGY PHYSICS

Theoretical research centers on problems in quantum field theory of relevance to particle accelerators. The fundamental theory of strong interactions (Quantum Chromodynamics or QCD) is applied through lattice Monte Carlo simulations. Numerical, nonperturbative, and perturbative methods are employed to study a variety of problems. The experimental group performs its experiments at accelerators located at national and international laboratories. Recent evidence suggests that neutrinos, among the poorest understood particles in the Standard Model, actually have a small but non-zero mass. Other experiments are seeking to observe the only undetected fundamental fermion, the tau-neutrino, and to study the production and properties of massive quarks such as the “top,” “bottom,” and “charm” quarks. The group also performs studies of possible violations of laws governing particle decay when the decay involves electrons and muons.

INTERMEDIATE ENERGY PHYSICS

This group studies the basic building blocks of matter using beams of elementary particles to explore the internal structure of nucleons. High flux and highly polarized beams are used to test QCD and fundamental symmetries in nature. Predicting and measuring the excited states of the nucleon is a challenging problem in QCD. The theoretical research program studies the microscopic structure of baryon spectroscopy where, due to the short life of excited baryons, refined quantum mechanical descriptions of the initial and final states are needed to learn about these baryon states. Experimentalists work toward the production of a complete description of baryon spectroscopy at Jefferson National Laboratory using the CLAS detector and lead the analysis of a variety of experiments in meson production with electron and polarized photon beams to explore the quark-gluon structure of the baryons.

MAGNETIC RESONANCE IMAGING

The Magnetic Resonance Imaging (MRI) group works on ground-breaking, ultrafast imaging techniques, which permit the observation of both streamline and turbulent fluid flow to provide means for studying the nature of fluid flows in both physical simulations and animals.

NUCLEAR PHYSICS

Experimental research in this field consists of research on the high-spin states of rotational nuclei, which tests fundamental ideas of the interplay between collective and single particle degrees of freedom in deformed (non-spherical) nuclei. A novel array of internal conversion electron spectrometers has been developed here to be used with the premier multiple gamma-ray detector systems.

EDUCATIONAL GROUP

An advantage of a research university is that students are exposed to ideas at the frontiers of physics and astronomy. The Educational Group holds research grants in the field of innovative science education to increase students’ interest in physics at both pre-college and college levels.

FACILITIES

The department’s facilities are located in a complex of five interconnected buildings: Allen Hall, Old Engineering Hall, Space Research Coordination Center, Thaw Hall, and the Nuclear Physics Laboratory. The department also maintains the Allegheny Observatory, located a few miles from the campus. Access to the University’s computer system is provided by personal computers and several computer rooms. The Department’s two parallel computers allow large calculations to be performed within the department. We also have access to the Pittsburgh Supercomputing Center (PSC), rated recently as the most powerful academically based supercomputer in the country. Experimentalists perform research at preeminent national, international, and space based laboratories and observatories.

ADMISSIONS

Admission to graduate study in the Department of Physics and Astronomy requires the satisfactory completion of most of the advanced undergraduate courses in the following: mechanics, electricity and magnetism, modern physics, quantum mechanics, thermodynamics and statistical mechanics, differential equations, and advanced calculus.

To be considered for admission, a student must have earned a baccalaureate degree in physics, astronomy, or some related field; must have an impressive undergraduate record; and must submit a complete application. A completed application also serves as an application for financial aid, if the candidate so desires. The application package includes:

- An application form (paper or Internet version)
- Original up-to-date transcripts from all college-level institutions attended
- Graduate Record Examination (GRE) scores on both the General and Advanced Physics tests
- Brief statement of purpose
- Three letters of recommendation
- International applicants only: TOEFL (Test of English as a Foreign Language) scores and completed “Financial Support Statement” and “Additional Information and Procedures for International Applicant” forms which are supplied in the application package

FINANCIAL ASSISTANCE

Financial aid is normally provided to graduate students through teaching or research assistantships. In addition, several competitive fellowships are available for entering students. All qualified applicants are automatically entered into a pool for these fellowships. Additional fellowships are awarded on the basis of a University-wide competition. The department endeavors to support all students throughout their

entire graduate career, provided good academic standing is maintained. Detailed information may be obtained by contacting the department.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections. Additional information is contained in the departmental brochures, "Graduate Studies and Requirements for the PhD" and "MS Degree and Department of Physics and Astronomy," both of which may be obtained from the departmental office.

REQUIREMENTS FOR THE MASTER'S DEGREE

A candidate for the Master of Science degree in either Physics or Astronomy must pass the appropriate MS comprehensive examination (often the same as the PhD preliminary examination), must maintain a quality point average of at least 3.00, and complete a minimum of 24 credits. MS students may elect either a thesis or a non-thesis program as detailed below:

1. Submit a thesis, in which case only six courses at the 1170 level or beyond are required.
2. Submit no thesis, in which case eight courses at the 1170 level or beyond are required.
3. Submit no thesis and take six courses at the 2513 level or beyond (reading courses or other academic work will be assigned by the department to enable the student to accumulate the requisite 24 credits in this option).
4. Submit a thesis and take five courses at the 2513 level or beyond (reading courses or other academic work will be assigned by the department to enable the student to accumulate the requisite 18 credits in this option).

No more than two non-physics courses at the 1170 level or beyond can be approved as credit for the MS degree

REQUIREMENTS FOR THE PHD DEGREE

The PhD programs in Physics and Astronomy aim to assure that the graduates are well versed in the fundamentals of their fields, have a broad knowledge of contemporary developments, and are experts in the techniques and current state of the subject area of their research. Dissertation research, a major part of the PhD program, should contribute significantly to the advancement of knowledge or the techniques of research in the field. Requirements on teaching, the presentation of seminars, and writing a dissertation serve to give the candidates some experience in the effective communication of their work.

The preliminary examination is taken in the spring term by all first-year graduate students. It is a written examination and covers advanced undergraduate material only. The comprehensive examination is also taken in the spring by second-year graduate students and some well-prepared first-year students. It is a written examination based on the core graduate courses. Students are not required to take the

Comprehensive Examination during their first year unless they have been admitted with advanced standing. In addition to passing the comprehensive examination, the PhD candidate must be judged satisfactory in at least three credit hours of teaching.

INDEPENDENT STUDY PLAN

Under this plan, an exceptionally able and well-motivated student may prepare for the examination and the completion of requirements without formal registration in the courses. Such a student would be assigned to a faculty member who would guide the student in a private course of study and meet with the student in frequent tutorial sessions. A student following this plan would be allowed freedom to attend courses as an auditor but must be registered for directed or independent study. Except in unusual cases, students will not be admitted to this plan until they have demonstrated their abilities by formal enrollment in the conventional manner for at least one term.

COURSE LISTINGS

The formal course offerings in the department are listed below. The undergraduate and the graduate core courses are offered every year, as are some of the more popular advanced courses. Other physics courses and the astronomy courses are given in alternate years or only occasionally, depending, in part, on student interest. Reading courses and independent studies may be arranged.

UNDERGRADUATE COURSES IN PHYSICS CARRYING GRADUATE CREDIT

PHYS 1170, 1171	Introduction to Quantum Mechanics I and II
PHYS 1172	Electromagnetic Theory
PHYS 1173	Mathematical Methods of Physics

CORE GRADUATE COURSES IN PHYSICS

PHYS 2513	Classical Mechanics
PHYS 2541, 2542	Statistical Mechanics and Thermodynamics
PHYS 2555, 2556	Classical Electricity and Magnetism
PHYS 2565, 2566	Non-relativistic Quantum Mechanics
PHYS 2675	Graduate Laboratory

OTHER GRADUATE COURSES IN PHYSICS

PHYS 2274	Computational Physics
PHYS 2997	Teaching of Physics/Astronomy (<i>Required of all new graduate students</i>)
PHYS 2998	Teaching of Physics/Astronomy, Practicum (<i>Required of all graduate students</i>)

ADVANCED GRADUATE COURSES IN PHYSICS

PHYS 3706	Atomic Structure and Interactions
PHYS 3707	Intermediate Quantum Mechanics
PHYS 3713	Quantum Optics
PHYS 3715, 3716	Solid-state Physics
PHYS 3717, 3718	Advanced Nuclear Physics
PHYS 3723, 3724	Contemporary Particle Physics
PHYS 3725, 3726	General Relativity
PHYS 3765	Relativistic Quantum Mechanics
PHYS 3766	Field Theory
PHYS 3767	Topics in Particle Physics

UNDERGRADUATE COURSES IN ASTRONOMY (AND GEOLOGY) CARRYING GRADUATE CREDIT

ASTRON	1120	Stars, Stellar Structure, and Stellar Evolution
ASTRON	1121	Galaxies and Cosmology
ASTRON	1263	Techniques of Astronomy
GEOL	1701	Geology of the Planets

GRADUATE COURSES IN ASTRONOMY

ASTRON	2101	Introduction to Astrophysics
ASTRON	3701	Radiation Processes in Astrophysics
ASTRON	3705	Astronomical Techniques
ASTRON	3750	Stellar Structure
ASTRON	3751	Interstellar Medium
ASTRON	3780	Galactic and Extragalactic Astronomy
ASTRON	3785	Cosmology

In addition to the courses listed here, special topics courses are offered periodically. The selection of these courses depends on faculty and student interest. Examples of special topics courses include:

- Phase Transitions
- Magnetic Resonance Imaging
- Superconductivity
- Chaos and Turbulence

POLITICAL SCIENCE

The Department of Political Science offers the degrees of Master of Arts and Doctor of Philosophy. The graduate program in Political Science incorporates four fields:

- American politics
- Comparative politics
- World politics
- Empirical and normative political theory

Students may combine work for the MA and PhD degrees with a program of regional specialization leading to a certificate in Latin American, Asian, West European, Russian, or Eastern European Studies. The Department of Political Science encourages students to undertake course work in related disciplines and schools, including the other social science departments and the **Graduate School of Public and International Affairs**.

Two specialized centers of interest to political scientists are located at the University of Pittsburgh: the **University Center for International Studies** and the University Center for Social and Urban Research. Additionally, the University's membership in the Inter-university Consortium for Political and Social Research provides the student with access to major sources of political data and opportunities for advanced training in the analysis of data.

CONTACT INFORMATION

Department Chair: Raymond E. Owen
 Main Office: 4L01 Posvar Hall
 Phone: (412) 648-7250
 Fax: (412) 648-7277
 Web site: <http://www.pitt.edu/~politics/>

Additional information concerning the department's graduate program may be obtained from the Director of Graduate Studies; Department of Political Science; University of Pittsburgh; Pittsburgh, PA 15260.

ADMISSIONS

Applicants for admission must submit transcripts of all college-level work, three letters of recommendation, a career statement, and scores on the verbal, quantitative, and analytical sections of the Graduate Record Examination. Two copies of the application for admission form should be completed and submitted along with the application fee. Applications will be accepted for Fall Term admission until April 15. For awards consideration, applications must be completed by January 1. The department admits students only for the Fall Term.

FINANCIAL ASSISTANCE

If there are adequate funds, a graduate student receiving a teaching assistantship or a teaching fellowship who has demonstrated high-quality graduate work can expect to have the fellowship renewed for up to three years. If the student has successfully passed the PhD comprehensive examinations at the outset of the fourth year, additional financial aid from the department will be contingent upon a yearly review indicating that the student is making substantial progress toward completing the dissertation. A graduate student who has not passed the PhD comprehensive examinations by September of the fourth year of graduate work ordinarily is not eligible for additional financial assistance until these examinations are passed.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

For the MA degree, students must earn 36 hours of credit with a B average or better in courses numbered 1000 or above. At least half of these credits must be carried in courses numbered 2000 or above. The 36 credits must include completion of the core course sequence in *empirical and normative theory* with grades of B or better. These courses include PS 2010, 2020, 2030, and 2040.

Students must then pass a comprehensive examination, for MA purposes, covering one of the four general fields: world politics, American politics, comparative politics, or empirical and normative political theory (beyond the core course sequence).

REQUIREMENTS FOR THE PHD DEGREE

The requirements for the doctoral degree are detailed below:

CREDIT REQUIREMENT

72 credit hours earned from any suitable combination of formal course work, independent study, research, teaching, or dissertation work.

ACADEMIC ADVISING, LANGUAGE, AND OTHER RESEARCH TOOL REQUIREMENTS

First-year graduate students are advised by the Director of Graduate Studies. After a student completes one term of full-time graduate work, or its equivalent, he or she will establish an advisory committee consisting of a chair representing the field that the student plans to choose for the MA comprehensive/PhD qualifying examinations and one other faculty member. The advisory committees, in consultation with their respective students, will plan the second-year programs. After a student passes the PhD qualifying examinations (see below), membership of the advisory committees will be adjusted, if necessary, to include a faculty member in the second field that the student plans to submit for the PhD comprehensive examinations.

The reconstituted advisory committee will design the program of course work, language, or other relevant requirements, and a tentative schedule that leads to the PhD comprehensive examinations. Students acquire basic methodological competence through the core-course sequence. Additional research tool requirements may be established by the students' advisory committees with reference to their specific programs. If a committee decides, for example, that courses of study in languages, advanced statistics, or other areas are required, it will also establish the measure of competence required. The record of these decisions is placed in each student's file. The requirements established by the committee must be met before students can undertake the PhD comprehensive examinations.

Subsequently, students will meet with the advisory committee or with the Chair when appropriate, for purposes of registration and additional planning and discussion until the PhD comprehensive examinations are passed and a dissertation committee is established for the overview.

PHD QUALIFYING EXAMINATIONS

Students are examined in one of the four fields of political science offered by the department. These examinations are offered during the first week of the Fall and Spring Terms—September and January, respectively. The results of the written examinations are forwarded by the Field Examining Committees to a Screening Committee composed of the chairs of the examining committees and the Director of Graduate Studies. The Screening Committee takes account of the written examination performance and the student's overall record in graduate studies to determine eligibility for formal acceptance into the PhD program. It renders one of three evaluations: "encouraged," "permitted," or "not permitted" to proceed to the PhD. These examinations can be retaken once.

SUPERVISED TEACHING EXPERIENCE

Supervised teaching experience is an integral part of the doctoral program. Normally, teaching experience is gained by conducting recitation sections of an introductory course or by assisting a faculty member in an undergraduate course.

COMPREHENSIVE EXAMINATION

The MA Comprehensive/PhD Qualifying examination is offered during the first week or two of the Fall (August/September) and Spring

(January) Terms. Students are examined in one of the four fields of political science offered by the department: American Politics, Comparative Politics, Political Theory (beyond the core-course sequence), and World Politics.

The PhD Comprehensive Examination is comprised of two stages. The first stage consists of a take-home examination, to be completed within 48 hours, which covers two questions in the student's second field. The second stage, contingent upon successful completion of the written take-home examination, consists of an oral examination covering both fields.

Beginning with students enrolling in Fall 1999, a substantial, sole-authored research paper in the student's major field must be submitted as part of the PhD examination process. This paper will be an option for continuing students, who may instead decide to take a second comprehensive examination in their major field at the PhD level.

Students are expected to demonstrate a professional level of mastery of the substantive and analytic questions in the field selected for examination, reflecting greater breadth and depth than demonstrated in the MA exam. Students take the written exam in their second field.

DISSERTATION OVERVIEW

Following successful completion of the comprehensive examination, the student files an application for admission to candidacy for the Doctor of Philosophy degree.

At this stage the student presents a proposed topic for doctoral research and a research design for its execution to be reviewed by a faculty committee. The student should give careful thought early in graduate work to possible doctoral research topics and discuss them with faculty members so that the student may proceed promptly to intensive research and writing of the dissertation.

FINAL ORAL EXAMINATION

The final oral examination in defense of the doctoral dissertation is conducted by the doctoral committee.

COURSE LISTINGS

UNDERGRADUATE COURSES THAT MAY CARRY GRADUATE CREDIT

PS	1201	The Constitution and Civil Liberties
PS	1202	American Constitutional Law
PS	1203	Judicial Politics
PS	1204	Women in Politics
PS	1205	Ethnic and Racial Politics
PS	1211	Legislative Process
PS	1212	American Presidency
PS	1213	Law and Politics
PS	1230	Interest Group Politics
PS	1231	Political Parties and Elections
PS	1232	Political Attitudes and Public Opinion
PS	1233	Political Psychology
PS	1234	Electoral Behavior and Democratic Processes
PS	1235	Media and Politics
PS	1241	Public Administration and the Political System
PS	1242	Intergovernmental Relations

PS	1243	Political Corruption	PS	1382	Contemporary Developments in the Russian Federation
PS	1251	Urban Government	PS	1383	Honors Seminar: Contemporary Middle East
PS	1252	State Government	PS	1501	Theory of International Relations
PS	1261	American Public Policy	PS	1502	International Law and Problems of World Order
PS	1262	Health Policy in the United States	PS	1503	International Organization
PS	1263	Governments in the Economy	PS	1504	Nationalism
PS	1264	Problems in Public Management	PS	1509	Conflicts and War Theory
PS	1265	Public Policy Implementation	PS	1511	American Foreign Policy
PS	1281	Honors Seminar: American Government	PS	1512	International Relations of Former Soviet Union and Russian Federation
PS	1301	Theories and Concepts in Comparative Government	PS	1513	Foreign Policies in a Changing World
PS	1302	Political Development	PS	1514	Political Strategies in International Relations
PS	1303	Movement Politics	PS	1516	Politics of Interdependence
PS	1311	Western European Governments and Politics	PS	1521	Eastern Europe in World Politics
PS	1312	British Government and Politics	PS	1522	Latin America in World Politics
PS	1313	French Government and Politics	PS	1523	East Asia in World Politics
PS	1314	German Government and Politics	PS	1531	National Security Policy
PS	1315	Italian Government and Politics	PS	1532	United States National Security
PS	1316	Scandinavian Government and Politics	PS	1533	Political Violence and Revolution
PS	1317	Politics of the European Community	PS	1541	Politics of Global Economic Relations
PS	1321	Latin American Politics	PS	1542	Global Environmental Politics
PS	1322	Latin American Political Development	PS	1544	The Political Economy of American Trade Policy
PS	1326	The Politics of Revolution	PS	1551	Cognitive Psychology and International Relations
PS	1331	Government and Politics of Southeast Asia	PS	1581	Honors Seminar: International Relations
PS	1332	Government and Politics of Communist China	PS	1601	Political Theory: Plato to Machiavelli
PS	1333	Government and Politics of Japan	PS	1602	Political Theory: Machiavelli to Rousseau
PS	1334	Vietnam War	PS	1603	Contemporary Political Thought
PS	1335	Political Economy of Japan: Government, Business, and Trade	PS	1604	European Social Thought and Political Practice
PS	1336	Field Seminar: Contemporary Chinese Politics, Society, and Economy	PS	1605	Modern Political Ideologies
PS	1341	Government and Politics of the Soviet Union and Russian Federation	PS	1607	American Political Thought
PS	1342	Government and Politics of East Europe	PS	1610	American Political Theory
PS	1343	Comparative Socialist Systems	PS	1611	Liberalism and Democracy
PS	1346	Political East Europe	PS	1612	Marxism
PS	1347	(Conflicts in) Contemporary Europe	PS	1614	Theories of Justice
PS	1351	Government and Politics of the Middle East	PS	1622	Women and Political Theory
PS	1352	Introduction to African Politics	PS	1623	Psychology and Politics
PS	1353	African Liberation Movements	PS	1629	Topics in Political Theory
PS	1361	Comparative Political Party Systems	PS	1636	Politics Through Film
PS	1362	Comparative Urban Government	PS	1681	Honors Seminar: Political Theory
PS	1371	Elites in Modern Society	PS	1682	Politics and Economy of Public Policy
PS	1372	European Environmental Policy Making	PS	1701	Field Methods Political Research
PS	1373	Welfare State in Comparative Perspective	PS	1702	Analysis of Political Variables
PS	1374	Political Economy of Development	PS	1710	Formal Political Analysis
PS	1375	Religion and Politics	PS	1900	Internship
PS	1376	Religion and Politics in the Middle East	PS	1901	Independent Study
PS	1378	Two Centuries of Democratization	PS	1902	Directed Reading
PS	1379	Is Fascism Back?	PS	1903	Directed Research
PS	1381	Honors Seminar: Comparative Government	PS	1910	Politics Institute Internship
			PS	1911	Politics Institute Internship Seminar

SEMINAR COURSES DESIGNED FOR GRADUATE STUDENTS

Students from departments other than Political Science should consult with the instructor before registering for any 2000-level course.

PS	2010	Concepts and Theories in Political Science	PS	2522	International Relations of Latin America
PS	2020	Empirical Methods of Research	PS	2525	IA Regional Foreign Policy Workshop
PS	2030	Political Research and Analysis	PS	2540	International Political Economy
PS	2040	Core Political Theory	PS	2541	Politics of Global Economic Relations
PS	2114	Capstone Seminar	PS	2542	North-South Relations and International Political Economy
PS	2115	Policy Design/Implementation	PS	2543	International Political Economy
PS	2116	Comparative Public Administration	PS	2554	Nuclear Weapons and International Politics
PS	2117	Strategic Management	PS	2555	Defense Policies
PS	2118	Gender, Race, and Public Policy	PS	2556	Problems in International Security
PS	2119	Administrative Theory	PS	2557	Alternative Approaches to National Security
PS	2200	American Government and Politics	PS	2604	Political Practice and Reason in European Social Thought
PS	2211	American Legislative Process	PS	2605	Democracy and Difference
PS	2212	The American Presidency	PS	2606	Contemporary Theories of Justice
PS	2214	Law and the Public's Health	PS	2612	Political Theory of Marxism
PS	2231	Ethics and Public Life	PS	2620	Special Topics in Political Theory
PS	2261	American Public Policy	PS	2621	Conflict Theory
PS	2262	Health Policy in U.S.	PS	2701	Advanced Methodology
PS	2263	Administration of Public Affairs	PS	2902	Directed Reading
PS	2264	Public Policy Analysis and Evaluation	PS	2903	Directed Research
PS	2302	Seminar in Political Development	PS	2970	Teaching of Political Science
PS	2311	Western European Government and Politics	PS	2990	Independent Study
PS	2312	Readings in European History	PS	3000	Research and Dissertation for the PhD Degree
PS	2313	Immigration and Citizenship in West Dem. Societies	SPECIALIZED SEMINARS		
PS	2314	Regions in Europe—The Europe of the Regions	These seminars are offered less frequently than alternate years.		
PS	2321	Latin American Politics	PS	2050	Advanced Methodology
PS	2325	Latin American Development Seminar	PS	2213	Judicial Process
PS	2333	State, Society, and Policymaking in Japan	PS	2230	Mass Politics
PS	2341	Government and Politics of the U.S.S.R. and the Russian Federation	PS	2233	Political Cognition
PS	2344	Collective Memory: Legacies of Defeat in Japan and Germany	PS	2241	Bureaucracy, Organization, and Politics
PS	2360	Comparative Politics: Women and Public Policy	PS	2251	Metropolitics
PS	2373	Comparative Welfare State	PS	2301	Theories and Concepts in Comparative Politics
PS	2375	Politics of Advanced Industrial Societies	PS	2304	Research Seminar in Comparative Politics
PS	2378	Political Sociology	PS	2305	Comparative Policy
PS	2501	Theory of International Relations	PS	2310	Politics of the European Community
PS	2502	Theory and Practice of International Affairs	PS	2322	Politics of Revolution
PS	2503	Topics in International Affairs	PS	2323	Political Economy of Development
PS	2508	Ethics in International Affairs and Developmental Studies	PS	2324	Seminar on Brazilian Politics
PS	2512	Russian Foreign Policy	PS	2335	Problems of Political Development in Southeast Asia
PS	2514	Political Strategies in International Relations	PS	2336	Peasant Politics
PS	2516	Foreign Policy Analysis	PS	2337	Topics in Chinese Politics
PS	2517	Foreign Policy Processes	PS	2342	East Europe: Communism, Revolution, Transition
PS	2518	National and International Security	PS	2343	Comparative Military Systems
PS	2519	Foreign Policy Disasters	PS	2374	Political Economy of Development
			PS	2377	Urban Economic Development
			PS	2381	Seminar in Political Institutions
			PS	2382	Research in Latin America

PS	2383	Reading in Latin America
PS	2481	Graduate Conference: Special Topics
PS	2504	Nationalism
PS	2505	Topics in International Relations
PS	2506	International Politics
PS	2507	Ideas and Public Policy
PS	2511	American Foreign Policy
PS	2513	Culture and Cognition in Foreign Policy: an Organizational Perspective
PS	2515	Diplomacy and Negotiation
PS	2523	East Asian International Relations
PS	2524	Middle East in World Affairs
PS	2551	Psychology and International Relations
PS	2552	Power and Interdependence
PS	2553	Arms Control and Disarmament
PS	2604	Political Practice and Reason in European Social Thought
PS	2612	Political Theory of Marxism
PS	2629	Political Theory: Special Topics

PSYCHOLOGY

The Psychology Department offers graduate training leading to the PhD with specialization in the fields of clinical psychology, cognitive psychology, developmental psychology, health psychology, and social psychology. The program in clinical psychology is accredited by the American Psychological Association.

CONTACT INFORMATION

Department Chair: Anthony R. Caggiula
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 Web site: <http://www.pitt.edu/~psych/>

RESEARCH

The research interests of the faculty and current graduate students include the following: cognitive and social development; cognitive neuroscience, psychoneuroimmunology, psychopharmacology; verbal processes; memory and cognitive functioning; instructional processes; social conformity; stereotypes; social motivation; attitudes; health psychology; behavioral medicine; and psychopathology.

FACILITIES

The facilities of the department include experimental laboratories, extensive computer facilities, a small groups laboratory, the Clinical Psychology Center, and the laboratories of the Learning Research and Development Center. These services offer the advanced graduate student opportunities for supervised practicum and research experiences.

The departmental facilities also include cooperative arrangements with many organizations in Pittsburgh engaged in various kinds of psychological work. These include Children's Hospital, Pittsburgh

Cancer Institute, the Western Psychiatric Institute and Clinic, the Office of Child Development, St. Francis Hospital, and several local agencies of the Veterans Administration Medical Centers. Collaboration with these organizations consists of part-time instruction by the staffs of these agencies, the sharing of laboratory and clinical facilities, and the appointment in those organizations of graduate students in psychology as clinical assistants, research assistants, or as part-time employees.

ADMISSIONS

Applications for admission must be completed by January 1 of the year for which admission is desired. Admission is in the Fall Term only. Applicants for admission to graduate study in psychology must submit academic transcripts and certified scores on the Graduate Record Examination.

As preparation for graduate study, the department recommends broad undergraduate training including courses in biology, mathematics, the physical sciences, the social sciences, and in effective oral and written expression. The department recommends college level mathematics and 12 credits of psychology, including experimental psychology, statistics, and, for clinical applicants, abnormal psychology. Upon being admitted, students are assigned to faculty advisors.

FINANCIAL ASSISTANCE

The Department of Psychology provides tuition and stipend support for students admitted to its graduate programs. Support may be in the form of a fellowship, research assistantship, or teaching assistantship. Qualified students are encouraged to apply for relevant fellowships. Historically, the department has been able to continue support for most students throughout their graduate training; however, continued financial support cannot be guaranteed.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

Normally, students are only admitted for graduate study leading to the PhD degree. Students who wish to do so may also obtain a master's degree by submitting an approved master's thesis and fulfilling the additional requirements described in the front of this bulletin under Regulations Pertaining to Master of Arts and Master of Science Degrees on page 21. Satisfactory completion of the core courses (see below) constitutes the comprehensive examination for the MS degree.

REQUIREMENTS FOR THE PHD DEGREE

■ Core Courses

Satisfactory completion of a series of core courses is required during the first two years of residence. This series includes two graduate psychology statistics courses and additional courses in the student's area of specialization. Each of the graduate programs has its own series of required courses.

RESEARCH

Satisfactory demonstration of competence in research is required. This involves completing a formal master's thesis, or a research paper judged equivalent by a faculty committee. In either case, an oral defense is required.

The preliminary evaluation consists of the completion (or exemption) of appropriate core courses plus the completion of the MS thesis or MS equivalent research paper. (Students entering with the MA or MS degree from another institution must have prior courses evaluated by the program faculty to determine to what extent the core program has been satisfied. If the student has already completed a master's thesis, that thesis must also be evaluated by the program faculty to determine whether or not it meets the research standards of the department.)

COMPREHENSIVE EXAMINATION

Passing a comprehensive examination in the student's area of specialization is required. This examination (a) must be taken within two calendar years after passing the core courses; (b) must be completed at least eight months before granting of the PhD degree; and (c) must be repeated if the degree is not granted within three calendar years after passing the comprehensive examination. Candidates failing the examination may, at the discretion of the faculty, be permitted to repeat the examination once.

PHD DISSERTATION

A PhD dissertation, with an oral defense, must be satisfactorily completed.

INTERNSHIP (FOR CLINICAL PSYCHOLOGY STUDENTS ONLY)

In addition, students who specialize in clinical psychology are required to complete an internship consisting of one year of experience in an approved agency, or an equivalent amount of part-time, supervised experience.

COURSE LISTINGS

PSY	2000	Research and Thesis for the Master's Degree
PSY	2005	Statistical Analysis 1
PSY	2010	Statistical Analysis 2
PSY	2015	Statistical Analysis 3
PSY	2020	Advanced Experimental Design
PSY	2025	Psychometric Foundations of Assessment
PSY	2050	Advanced Data Analysis
PSY	2100	Research Methods: Social Psychology
PSY	2105	Social Research Seminar
PSY	2110	Topics in Social Psychology
PSY	2125	Social Psychology: Attitudes
PSY	2130	Interpersonal Relations
PSY	2135	Social Perception and Cognition
PSY	2155	Psychology of Small Groups
PSY	2160	Personality
PSY	2200	Research Methods in Clinical Psychology
PSY	2205	Psychopathology
PSY	2210	Clinical Research Practicum
PSY	2220	Practicum: Psychological Clinic
PSY	2225	Advanced Practicum
PSY	2230	Clinical Assessment 1

PSY	2235	Clinical Assessment 2
PSY	2245	Developmental Psychopathology
PSY	2250	Clinical Psychology 1: Psychotherapy Theory and Research
PSY	2251*	Cognitive and Behavioral Methods
PSY	2252*	Behavioral Medicine Interventions
PSY	2253*	Families and Children Therapy
PSY	2255	Clinical Psychology 2: Cognitive and Behavioral Approaches
PSY	2260	Clinical Psychology 3: Biological Basis of Psychopathology
PSY	2265	Interviewing Skills
PSY	2270	Child and Family
PSY	2276	Topics Seminar in Clinical Psychology
PSY	2280	Professional Issues
PSY	2285	Field Study in Clinical Psychology
PSY	2300	Developmental Psychology: Research Methods
PSY	2310	Foundations: Developmental Psychology
PSY	2315	Developmental Psychology: Infancy
PSY	2320	Developmental Psychology: Language
PSY	2325	Developmental Psychology: Social Development
PSY	2330	Developmental Psychology: Cognitive Development
PSY	2335	Developmental Psychology: Social Cognitive Development
PSY	2376	Topics Seminar in Developmental Psychology
PSY	2400 ²	Human Cognition: Research Methods
PSY	2403*	Research Seminar Cognitive Psychology
PSY	2405*	Foundations: Learning and Conditioning
PSY	2410*	Perspectives in Cognitive Science
PSY	2420*	Foundations: Behavioral Analysis
PSY	2430*	Concepts and Categories
PSY	2450*	Human Cognition: Problem Solving and Reasoning
PSY	2455*	Human Cognition: Language
PSY	2460*	Human Cognition: Learning and Memory
PSY	2465*	Perception and Attention
PSY	2470*	Human Cognition: Skill Acquisition
PSY	2475	Cognitive Neuroscience
PSY	2476	Topics Seminar in Cognitive Psychology
PSY	2480	Computational Neuroscience Methods
PSY	2495	Psychology of Reading
PSY	2500	Research Methods in Biopsychology
PSY	2505	Program Research Seminar
PSY	2510*	Foundations in Perception
PSY	2520	Psychoneuroimmunology
PSY	2525	Introduction to Behavioral Pharmacology
PSY	2550	Physiological Bases of Behavior
PSY	2555	Psychophysiology

*These course are sometimes offered in seven-week modules.

PSY	2560	Human Cardiovascular Psychophysiology
PSY	2565	Introduction to Behavioral Pharmacology
PSY	2570	Principles of Behavior
PSY	2575	Topics in Psychology
PSY	2576	Topics Seminar in Biopsychology
PSY	2970	Teaching of Psychology
PSY	2990	Independent Study
PSY	3000	Research and Dissertation for the PhD Degree

PSY	3490	Advanced Seminar in Learning and Instructional Processes
PSY	3510	Seminar in Perception
PSY	3515	Seminar in Comparative Animal Behavior
PSY	3520	Special Topics in Psychopharmacology
PSY	3575	Conditioning and Physiological Regulation
PSY	3902	Directed Study
PSY	3970	Seminar in Teaching of Psychology

Seminars require permission of the instructor. Specific topics covered in a seminar vary with the instructor(s).

PSY	3010	Seminar in Quantitative Methods
PSY	3020	Seminar: Academic Role of the Psychologist
PSY	3105	Seminar in Social Psychology
PSY	3110	Seminar in Topics in Social Psychology
PSY	3130	Seminar: Special Topics in Gender Roles
PSY	3135	Seminar in Social Cognition
PSY	3160	Seminar in Personality and Social Psychology
PSY	3165	Seminar in Evaluation Research
PSY	3200	Seminar in Clinical Research
PSY	3205	Seminar in Behavior Genetics
PSY	3207	Seminar: Psychology of Black Experience
PSY	3215	Seminar in Behavioral Medicine
PSY	3216	Advanced Seminar in Behavioral Medicine
PSY	3220	Seminar in Family Research and Therapy
PSY	3225	Seminar in Emotion
PSY	3230	Seminar in Childhood Disorders
PSY	3235	Seminar in Projective Techniques
PSY	3240	Seminar in Psychotherapy
PSY	3245	Seminar in Addiction
PSY	3255	Seminar in Behavior Modification
PSY	3290	Research in Child Psychopathology
PSY	3295	Seminar in Minority Therapy
PSY	3315	Seminar in Infancy
PSY	3320	Seminar in Language Development
PSY	3330	Seminar in Developmental Cognition
PSY	3335	Seminar in Perceptual Development
PSY	3340	Seminar in Social-Cognitive Development
PSY	3345	Seminar in Social Development
PSY	3350	Seminar in Early Childhood
PSY	3405	Seminar in Animal Learning
PSY	3410	Seminar in Cognitive Processes
PSY	3430	Seminar in Problem Solving
PSY	3440	Seminar in Intelligence
PSY	3455	Seminar in Psycholinguistics
PSY	3460	Psychology and International Relations
PSY	3470	Informal Reasoning and Argumentation
PSY	3485	Seminar in Learning and Instructional Processes

RELIGIOUS STUDIES

The Department of Religious Studies offers the doctoral degree in cooperation with the Pittsburgh Theological Seminary and faculty from Carnegie Mellon University and Duquesne University. The department also offers the MA degree.

CONTACT INFORMATION

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ADMISSIONS

A bachelor's degree is required for admission. Applicants to the doctoral program who have already received a master's degree may petition to have up to 24 credits counted toward the PhD.

All applicants must submit the following:

- A statement of professional goals and reasons for applying
- A sample of written work
- Official transcripts of previous academic work
- Three (academic) letters of recommendation
- Aptitude scores on the Graduate Record Examinations
- A completed application form

FINANCIAL ASSISTANCE

Financial aid is distributed in the department chiefly on the basis of merit. Three kinds of aid are available:

- University-wide grants, including Mellon Predoctoral and FLAS Fellowships (*See Fellowships and Traineeships on page 36 of the FAS section of the bulletin for details.*)
- A small number of teaching assistantships
- Tuition scholarships (for those students nearing the end of the program)

In addition, some financial aid is available to disadvantaged students through the Office of the Provost.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

The purpose of the master's program is to provide students with a broad background in theory and method, train them in basic research skills, and extend their understanding of their principal field of interest. To that end, students must satisfy certain course, examination, and thesis requirements as detailed below:

COURSE REQUIREMENTS

Each student completes 27 credits of course work, distributed as follows:

1. Two courses in theory and method, one of which must be Perspectives on Religion.
2. Four courses from one of the subheadings under a) and b):
 - a) Religion in the Modern World:
 - Judaism
 - Christianity
 - Religion in Asia
 - Religion in the Americas
 - b) Religion in Historical Settings:
 - Religion in Antiquity
 - Religion in Medieval and Renaissance Europe
 - Religion in Medieval and Early Modern Asia
3. Two courses from a second subheading (for example, Religion in Medieval and Renaissance Europe).
4. A course in which the student concentrates on the research and writing of the MA thesis.

COMPREHENSIVE EXAMINATION

Each student takes a written exam designed to synthesize the work already done in the program.

LANGUAGES

There are no language requirements for the MA, but students who plan to do doctoral work are encouraged to study the languages that will be relevant to their specializations. Students in the MA program will not be recommended for the PhD track in Religion in the Modern World unless they have competence in at least one relevant modern language other than English, and they will not be recommended for the track in Religion in Historical Settings unless they have competence in one language of primary research and one language of scholarship other than English.

RESEARCH ESSAY

Each student submits an original research essay in the relevant specialization. The student works with the advisor to find a suitable question to pursue, forms a committee of three faculty, and discusses the project with them while working on it. When the project is complete, the student sits for a one-hour oral defense of the thesis. The oral exam completes the work for the degree. The student is then awarded the master's degree by the University.

REQUIREMENTS FOR THE PHD DEGREE

The primary purpose of the Cooperative Graduate Program in the Study of Religion is to train scholars for careers as researchers and college teachers. There are two tracks to the program: Religion in the Modern World and Religion in Historical Settings. Each of these tracks is divided into specializations (as listed above under course requirements for the master's degree).

Within their specializations, students work with their advisors to design programs that will address their specific intellectual and career goals. With eight core faculty and 43 affiliated faculty, students have considerable freedom in how they do this. The chief constraint is the need to acquire a breadth of teaching competence along with a depth of research expertise. Students work with their advisors to identify the breadth/depth balance appropriate to their specializations and career goals.

Prospective students may find it useful to know some of the interests of the faculty. These include religious conceptions of law, freedom, and authority; ideological formations; religious ritual; religious conceptions of personhood and gender; religion and ethics; concepts of mind; religion and metaphysics; historicism and hermeneutics; the emergence of modernity and post-modernity; religion and globalization; the encounter of traditions; religious war; religion and colonialism; religious persecution and tolerance; religion and ethnicity; memory, tradition, and identity; religion in popular culture; religion and society; religious language and symbolism; religion and the arts; religious conceptions of space and time; science and religion.

COURSE REQUIREMENTS

Students take a minimum of 72 credits of graduate work beyond the bachelor's degree. These credits are broadly distributed according to the five requirements described below:

1. In their initial terms in the program, students take three courses in theory and method: (a) a required seminar, Perspectives on Religion; (b) an initial seminar on the principal methodology that they intend to use—for example, history for the historian of religion, philosophy for the philosopher of religion; and (c) a seminar on a second methodology, complementary to the first—for example, ethnography for the historian of religion, history for the philosopher of religion (9 credits).
2. Students also take two courses in each of two traditions other than their tradition of specialization (12 credits).
3. During the course of their studies, students take twelve elective credits (12 credits).
4. Students also write a master's thesis (see below) on a question central to their work (up to 9 credits).

5. Increasing their focus as they advance in the program, and working closely with their advisors to achieve the objectives set forth in their Program Statements (see below), students take at least thirty credits in their areas of specialization (30 credits).

No more than two 1000-level undergraduate courses may be taken for graduate credit.

THE MASTER'S THESIS AND OTHER EXAMINATIONS

See information above on the master's-level exams.

THE DISSERTATION

A doctoral dissertation is an independent, original, and significant contribution to knowledge. Typically each student forms the dissertation committee from the members of the comprehensive examination committee. Working with the advisor to clarify objectives and approach, and with an eye to developing a project that can be completed in two years of concentrated work, the student writes a dissertation prospectus that describes the project and the strategy for its completion. The student then circulates the prospectus to the members of the dissertation committee, and meets with them in a Prospectus Meeting to discuss the viability of the project. After receiving the approval of the members of the committee, the student begins the research. While researching and writing the dissertation, the student meets regularly with the dissertation advisor, and annually with the full committee. When the student completes the manuscript, the student meets with the committee to take questions in a two-hour oral examination. Upon passing the oral examination and submitting an approved dissertation, the student has completed the program and is then awarded the doctoral degree by the University.

COURSE LISTINGS

THEORY AND METHOD

COMMRC	1121	History of Mass Media
PS	1375	Religion and Politics
ANTH	1771	Religion and Culture
HIST	2004	Philosophy of the Cultural and Social Studies
CLST	2004	Philosophy of Human and Social Science
PS	2010	Concepts and Theories in Political Science
ENG	2043	Theory of Popular Culture
ENG	2053	Metaphor and Critical Theory
HIST	2102	Perceptions of the Past
GER	2148	History, Memory, and Narrative
COMMRC	2204	Myth, Ideology, and Science
COMMRC	2226	Media and Cultural Studies
CLST	2230	Comparative Research
REL	2305	Religion and History
REL	2315	Hermeneutics and Historicism
PHIL	2320	Social Philosophy
REL	2367	Temple, Icon, Deity
PHIL	2470	Philosophy of Religion
PHIL	2480	Metaphysics
REL	2505	Religion, Communication, and Culture
REL	2507	Metaphor
HPS	2687	Rationality and Relativism
HPS	2693	Philosophy of Science in the Humanities

REL	2705	Myth, Symbol, Ritual
REL	2710	Perspectives on Religion
REL	2725	Readings in the Study of Religion
REL	2730	Philosophy and Religion
REL	2745	Ritual Process
CLST	2748	History of Anthropological Theory
ANTH	2755	Cultural, Social, and Psychological Explanation
ANTH	2759	Urban Anthropology
REL	2760	Sociology of Religion
REL	2762	Sociological Theory 1—Classical
REL	2763	Sociological Theory 3—Recent
REL	2765	Cultural Sociology
ANTH	2772	Communication and Culture
ANTH	2773	Cognition and Culture
ANTH	2783	Social Stratification and Expressive Culture
REL	2810	Perspectives on Comparative Religious Studies
REL	2820	Evidence and Argument in the Human Sciences
REL	2821	Kant and Heidegger on Truth, Art, and Religion
REL	2830	Cultural Critics
COMMRC	3306	Rhetoric and Culture
CLST	3306	Seminar in Rhetoric and Culture
CLST	3325	Seminar in Mass Communication
REL	3510	Systems of Religious Thought
REL	3548	Weber and Troeltsch
REL	3550	Troeltsch's <i>Social Teachings of the Christian Churches</i>
REL	3708	City and Symbol
REL	3712	Stories and Symbols
REL	3749	Directed Study in Ritual Studies
REL	3761	Critical Issues in Sociology of Religion

RELIGION IN THE MODERN WORLD: GLOBAL ISSUES

ANTH	1276	Development, Education, and Applied Anthropology
PHIL	1340	Feminist Philosophy
ANTH	1524	Women and Gender in the Third World
PS	1541	Politics of Global Economic Relations
PS	1612	Marxism
RELGST	1620	Women in Religion
ANTH	1738	Gender Perspectives in Anthropology
HIST	1756	Comparative Civilizations
ANTH	1769	Dynamics of Ethnicity
ANTH	1772	Anthropology of Women
ANTH	1779	Social and Cultural Change
ENG	2011	Issues in Cultural Studies
HIST	2042	Sociology of Revolution
PIA	2193	Gender, Race, and Public Policy
COMMRC	2229	Global Cultures
PS	2302	Politics of Developing Areas
SOC	2304	Modernization
SOC	2305	Global Change and Modern Life

- PIA 2316 Intercultural Communication
 PS 2322 The Politics of Revolution
 SOC 2340 World Systems—Theory and Research
 PHIL 2340 Philosophical Perspectives on Feminism
 ENG 2350 Postmodernism
 PIA 2356 Transnational Interactions
 ENG 2389 Third World Literature
 ENG 2390 History of Colonialism 1492-Present
 PIA 2407 Knowledge, Ideology, and Public Policy
 PS 2507 Ideas and Public Policy
 PIA 2525 Politics of Development
 ANTH 2551 Peoples in Contact
 PS 2612 Political Theory of Marxism
 ENG 3141 Intellectuals
 REL 3444 Liberation Ethics
 REL 3545 Medical Ethics
 REL 3546 Law, Theology, and Ethics
 REL 3549 Directed Study in Ethics
 REL 3562 Moral Issues in International Politics
- RELIGION IN THE MODERN WORLD: JUDAISM**
 RELGST 1252 History of the Holocaust
 RELGST 1256 Modern Israel
 PS 1376 Religion and Politics in the Middle East
 RELGST 1650 Approaches to Anti-Semitism
 REL 2115 History of Israel
 REL 2135 Classical Judaism
 REL 2325 Jews in the Islamic World
 REL 2336 Modern Judaism
 GER 2810 Weimar Culture
 GER 2884 Weimar Cinema
 GER 2886 Film in the Third Reich
 REL 3309 Directed Study in Judaism
- RELIGION IN THE MODERN WORLD: CHRISTIANITY**
 REL 3314 Puritanism
 REL 3324 Pietism
 REL 3345 Religious Thought of the 19th Century
 REL 3349 Directed Study—History of Christianity
 REL 3352 Contemporary Eastern Christianity
 REL 3423 Reinhold Niebuhr
 REL 3441 Christian Perspectives on Evil and Redemption
 REL 3525 Directed Study: 19th-century Protestant Theology
 REL 3560 Christianity and Economic Systems
- RELIGION IN THE MODERN WORLD: RELIGION IN ASIA**
 CLP 1056 Japanese Literature and the West
 CLP 1058 Western and Samurai Films
 PS 1333 Government and Politics of Japan
 PS 1335 Political Economy of Japan
 SOC 1354 Japan and the U.S.A.
 HIST 1433 Modern Japan
- HIST 1447 Economic History of Japan
 PS 1523 East Asia in World Politics
 ECON 1630 Economic Development of China
 ECON 1640 Japanese Economic Growth
 ANTH 1739 Cultures of East Asia
 ANTH 1759 Chinese Society
 ANTH 1764 Cultures and Societies of India
 ANTH 1783 Japanese Culture
 ANTH 1784 Japanese Society
 HIST 1900 Asian Cities
 REL 2365 Religion in India 1
 REL 2366 Religion in India 2
 REL 2375 Tradition and Change in Southeast Asia
 ANTH 2760 Seminar on Japanese Society, Culture, and Education
 ECON 2930 Research Seminar—Economy of China
 REL 3368 Topics in South Asian Religions
 REL 3369 Directed Study in Hinduism
 REL 3374 Topics in East Asian Buddhism
 REL 3376 Topics in East Asian Religions
 REL 3379 Directed Study in Buddhism
 REL 3384 Topics in Chinese Religions
 REL 3385 Directed Study—Chinese Religious Traditions
 REL 3388 Topics in Chinese Buddhism
 REL 3389 Directed Study—Chinese Buddhism
 REL 3394 Topics in Japanese Religions
 REL 3395 Directed Study—Japanese Religious Traditions
 REL 3398 Topics in Japanese Buddhism
 REL 3399 Directed Study—Japanese Buddhism
- RELIGION IN THE MODERN WORLD: RELIGION IN THE AMERICAS**
 REL 2330 Science and Religion in the 17th Century
 REL 2345 Theology and Society in 19th-century America
 REL 2347 Theology and Society in 20th-century America
 REL 2355 Church and Religion in Latin America
 REL 3314 Puritanism
 REL 3324 Pietism
 REL 3330 Enlightenment and Awakening
 REL 3340 American Church History
 REL 3341 American Religious History
 REL 3350 Protestantism in Latin America
 REL 3527 Liberation Theology: Latin America
 REL 3543 Christianity in Latin America
 REL 3544 Contemporary Christian Ethics
- RELIGION IN HISTORICAL SETTINGS: RELIGION IN ANTIQUITY**
 REL 2105 Faith and Culture—Ancient Near East
 REL 2115 History of Israel
 REL 2125 Greek and Roman Religions
 REL 2135 Classical Judaism

REL	2145	Early Christianity
REL	2515	Christianity in Late Antiquity
REL	3110	Introduction to Egyptian Language and Literature
REL	3112	Readings in Middle Egyptian
REL	3114	Egypt and Ancient Israel
REL	3115	Ancient Texts Relating to the Hebrew Bible
REL	3116	Advanced Readings in Semitism
REL	3120	Hebrew Bible—Prophets
REL	3123	Amos
REL	3124	Ezekiel
REL	3125	Isaiah
REL	3126	Jeremiah
REL	3127	Wisdom Literature
REL	3129	Directed Study: Hebrew Bible
REL	3130	Dualism in the Ancient World
REL	3140	Christianity According to Matthew
REL	3155	Romans
REL	3156	Pauline Studies
REL	3157	Epistle to the Hebrews
REL	3158	Gospel of John
REL	3159	Directed Study: Christian Bible
REL	3309	Directed Study in Judaism

RELIGION IN HISTORICAL SETTINGS: RELIGION IN MIEVEAL AND RENAISSANCE EUROPE

REL	2135	Classical Judaism
REL	3170	Augustine
REL	3310	Calvin's Institutes
REL	3349	Directed Study—History of Christianity
REL	3509	Directed Study—Christian Literature
REL	3512	Maimonides
REL	3514	Aquinas
REL	3523	Major Christian Theologians
REL	3540	Medieval Christian Ethics

RELIGION IN HISTORICAL SETTINGS: RELIGION IN MIEVEAL AND EARLY MODERN ASIA

REL	3368	Topics in South Asian Religions
REL	3369	Directed Study in Hinduism
REL	3374	Topics in East Asian Buddhism
REL	3376	Topics in East Asian Religions
REL	3379	Directed Study in Buddhism
REL	3384	Topics in Chinese Religions
REL	3385	Directed Study—Chinese Religious Traditions
REL	3388	Topics in Chinese Buddhism
REL	3389	Directed Study—Chinese Buddhism
REL	3394	Topics in Japanese Religions
REL	3395	Directed Study—Japanese Religious Traditions
REL	3398	Topics in Japanese Buddhism
REL	3399	Directed Study—Japanese Buddhism

SLAVIC LANGUAGES AND LITERATURES

The Department of Slavic Languages and Literatures offers graduate training leading to the MA and PhD degrees in Slavic Languages and Literatures with an Area of Concentration in Russian Literature and Culture. For detailed information on special features of the Slavic program, write for the departmental brochure.

CONTACT INFORMATION

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ADMISSIONS

The completion of an undergraduate major in Russian is usually required for admission to the department. Students with majors in European history, literature, or philosophy and the equivalent of four years of undergraduate Russian are also encouraged to apply. Applicants should be able to read, write, and speak Russian well enough to take courses offered in Russian. Students are expected to maintain a minimum grade average of B in course work.

FINANCIAL ASSISTANCE

Financial aid is available for new and continuing graduate students on a competitive basis. Andrew Mellon Predoctoral Fellowships, Lillian B. Lawler Scholarships/Fellowships, Provost's Humanities Fellowships, Owens Fellowships, Provost's Development Fund Fellowships, and Graduate Tuition Scholarships are open to all students, as are the FLAS Fellowships offered through the University of Pittsburgh's Russian and East European Studies Program. University teaching assistantships and fellowships are available to qualified applicants and are renewable for a period from one to three years.

Financial support opportunities other than fellowships and assistantships are available to incoming and continuing graduate students in the form of part-time employment in the residence halls, library, and so on. Outstanding students are encouraged to apply to the international exchange programs sponsored by the Nationality Rooms Scholarship Committee, IREX, CIEE, the Kosciuszko Foundation, AFS Teacher Exchange, and other organizations. Each year grants are available for study in Central and East Europe, including Russia, Ukraine, the Czech Republic, Slovakia, Poland, Serbia, and Croatia.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

MASTER OF ARTS IN SLAVIC LANGUAGES AND LITERATURES (PHD TRACK)

The MA requires 36 graduate credits, including Proseminar, Old Church Slavic, Structure of Russian, and one other linguistics course.

A reading knowledge of French or German is required. The study of a second Slavic language and literature is recommended. A written comprehensive examination will include the history of Russian literature—a thorough knowledge of the major authors, genres, and periods; and a knowledge of the fundamentals of literary criticism and theory.

All MA students are required to take SLAV 2210. Those planning to terminate their study with the MA must also take RUSS 2220 and RUSS 2230.

TEACHING CERTIFICATION

The above-mentioned master's program may be combined with teaching certification. Teaching certification is recommended for students interested in pursuing a career in the teaching of foreign languages in the Pennsylvania public school systems (or elsewhere). This is a combined program sponsored in conjunction with the **School of Education**. Students in this program will also have to meet the requirements and be admitted to the **School of Education**. Upon successful completion of this program, the student will receive the Pennsylvania Instructional 1 (Provisional) Certificate of teaching Russian in the public school system. For credit and course requirements, students should consult the foreign language education supervisor in the **School of Education**.

CERTIFICATE PROGRAM

The MA program in the Department of Slavic Languages and Literatures may also be combined with a certificate program in Russian Studies or with one in Eastern European Studies. The certificate program is recommended for all students primarily interested in pursuing careers in government or business, not excluding students interested in teaching, or for students whose primary language interest is Slovak, Polish, Ukrainian, or Serbian. The Center for Russian and East European Studies (REES) is the coordinating hub for studies dealing with the people, history, politics, economics, and culture of Central and South East Europe and the territory of the former U.S.S.R.

Requirements include meeting all departmental MA requirements, plus 18 credits designated as REES courses. Students do not need to apply for the REES certificate program in advance, but may do so upon arrival in Pittsburgh.

REQUIREMENTS FOR THE PHD PROGRAM

Admission to the PhD program requires successful completion of the MA requirements and the recommendation of the departmental committee on graduate studies. If the MA has been obtained elsewhere, the candidate may be required to pass a preliminary examination, similar in scope to the departmental master's comprehensive exam. Credit requirements for the doctorate include 60 credits of 2000- and 3000-level courses (36-42 credits beyond the master's) and 12 credits of dissertation research or independent study, for a total of 72 credits. For an MA from another institution, a maximum of 24 credits may be transferred.

The PhD is offered only with an Area of Concentration in Russian Literature and Culture. At least 60 of the 72 required credits must be taken by the end of the term in which examinations are to be taken. Requirements include three courses (Historical Russian Grammar, History of the Russian Literary Language, and Theories of Literature); 9-15 credits outside the department in an approved second area (Cultural Studies, European Literature, Area Studies); and a reading knowledge of French and German.

SECONDARY FIELDS

Doctoral candidates may take 9-15 graduate credits in one of the following approved areas:

■ A Second Slavic Language and Literature

In exceptional cases, students who express a primary interest in, and knowledge of, another Slavic language and literature may be encouraged to pursue dual competency in both languages and literatures.

■ Literary Studies

This field requires courses in other literatures (as approved by the department) and in the Literature Studies Program, of which at least six credits must be taken in the literature of a single language other than English, Russian, or other Slavic language; and a reading knowledge of two non-Slavic languages.

■ Slavic Linguistics

In this field, nine courses in linguistics must be taken in addition to the usual Slavic linguistics requirements for literature specialists (see below).

■ Intellectual History

This field requires nine courses in history, philosophy, political science, or other relevant courses at the 1000-level or above.

■ Cultural Studies

Students working toward an MA or PhD degree may concurrently earn a certificate in Cultural Studies.

Other possible options may also be discussed with the graduate advisor and the departmental committee on graduate studies.

ADDITIONAL LANGUAGE REQUIREMENT

A reading knowledge of French and German (or of another approved non-Slavic language) is required as a research tool. Proficiency in one of these is to be demonstrated by the end of the student's first full year of candidacy and, in the other, before the student takes the PhD examinations. Elementary language courses do not count toward degree credit requirements.

LINGUISTICS COURSES

All students are required to take 2210 for the MA and PhD degrees (*see the list of courses in the next section*). Those planning to terminate their studies with the MA must also take 2220 and 2230. Those wishing to continue for the PhD may take 2220 and 2230 at any stage of their graduate studies.

COMPREHENSIVE EXAMINATIONS

Candidates will be required to demonstrate competence in (a) the history of Russian literature, (b) the secondary field, and (c) literary criticism. The written examinations are of nine to twelve hours duration spread over a week; the oral examination is of two hours duration.

THE DISSERTATION

To be completed in accordance with general University regulations. All topics must meet with the approval of the departmental committee on graduate studies. After selecting a suitable dissertation topic and a dissertation committee in consultation with his/her advisor, the student must present a written prospectus to the doctoral committee describing the purpose, scope, and method of the proposed study and the sources upon which it will be based. This prospectus must receive the approval of all members of the doctoral committee at an overview

examination. The acceptance of the prospectus completes requirements for admission to candidacy for the PhD degree. The dissertation must demonstrate the student's capacity to carry out independent, original research and analysis. The department will recommend conferral of a doctoral degree only after the dissertation is judged to demonstrate such competence during a formal defense in a final oral examination. Detailed guidelines covering examination procedures and dissertation requirements are available from the department.

COURSE LISTINGS

Courses covering core areas will be offered on a rotating basis at least once every six terms so that usually one course in a major period, author, genre, and topic will be offered each term. Other courses will be offered as often as circumstances permit. Students are advised to check the *Schedule of Classes* each term for the current course offerings. Course descriptions of 1000-level courses may be found in the *Course Descriptions* issued each term.

UNDERGRADUATE COURSES THAT MAY CARRY GRADUATE CREDIT

RUSSIAN IN ENGLISH TRANSLATION

RUSS	1200	Russian Women Writers
RUSS	1202	Dostoevsky: The Major Novels
RUSS	1203	Tolstoy: The Major Novels
RUSS	1204	Short Stories: Dostoevsky, Tolstoy, Turgenev
RUSS	1901	Independent Study

POLISH

POLISH	1260	Survey of Polish Literature and Culture
POLISH	1270	Polish Drama
POLISH	1280	Modern Polish Literature
POLISH	1901	Independent Study

SERBIAN IN ENGLISH TRANSLATION

SERCRO	1260	Survey of Serbian Literature and Culture
SERCRO	1270	Serbia Today
SERCRO	1901	Independent Study

SLOVAK IN ENGLISH TRANSLATION

SLOVAK	1260	Survey of Slovak Literature and Culture
SLOVAK	1270	Slovakia Today
SLOVAK	1901	Independent Study

RUSSIAN LANGUAGE AND LITERATURE IN RUSSIAN

RUSS	1302	Gogol
RUSS	1303	Turgenev
RUSS	1305	Tolstoy
RUSS	1306	Dostoevsky
RUSS	1307	Chekhov
RUSS	1317	Solzhenitsyn
RUSS	1400	Morphology
RUSS	1410	Advanced Russian Syntax
RUSS	1440	Russian Prose Translation
RUSS	1500	History of Russian Literature 1
RUSS	1501	History of Russian Literature 2

BASIC LANGUAGE

All basic language course offerings in Russian, Polish, Serbian, Slovak, and Ukrainian may be found in the *CAS Bulletin* under the Department of Slavic Languages and Literatures.

GRADUATE LEVEL COURSES IN RUSSIAN LANGUAGE AND LITERATURE

Students not having graduate standing in the Department of Slavic Languages and Literatures should obtain the instructor's consent before registering for the following courses.

LINGUISTICS AND PEDAGOGY

SLAV	2210	Introduction to Old Church Slavic
SLAV	2211	Readings in Old Church Slavic Literature
SLAV	2212	Comparative Slavic Linguistics
SLAV	2215	Topics in Slavic Linguistics
RUSS	2101	Practical Russian Stylistics
RUSS	2102	Readings and Translations
RUSS	2111	Stylistics and Literary Analysis
RUSS	2112	Literary Analysis
RUSS	2113	Bakhtinian Criticism
RUSS	2114	Russian Journals – 19th and 20th Centuries
RUSS	2210	Structure of Russian
RUSS	2213	Computer-aided Instruction
RUSS	2214	Materials and Methods for the Teaching of Russian
RUSS	2217	Readings in Old Russian Literature
RUSS	2220	Development of the Russian Literary Language
RUSS	2230	Historical Grammar of the Russian Language

BACKGROUND

RUSS	2110	Proseminar: Approaches to Literature
RUSS	2120	Proseminar: Methods and Materials

PERIOD

RUSS	2410	Late 17th- and 18th-century Literature
RUSS	2460	Soviet Literature of the 1920s
RUSS	2602	Poetry of the Soviet Period
RUSS	2700	Old Russian Literature
RUSS	2702	Late 19th- and Early 20th-century Literature
RUSS	2703	Russian and Soviet Literature
RUSS	2704	Soviet Literature 1917-1958
RUSS	2705	Contemporary Voices in Soviet Literature
RUSS	2801	Literature and Society in 19th-century Russia
RUSS	2802	Cultural Renaissance Early 20th-century Russia

GENRE

RUSS	2470	Recent Russian Prose
RUSS	2600	Russian Poetry: 19th-Century
RUSS	2601	Russian Poetry: 20th-Century
RUSS	2603	Russian Romantic Poetry
RUSS	2604	Narrative Poetry of the 19th-20th Century
RUSS	2605	Poetry of the Revolution
RUSS	2606	Poetics and Versification

RUSS	2610	Russian Short Story
RUSS	2620	Russian Drama: 19th-Century
RUSS	2621	Russian Drama
RUSS	2622	Modern Russian Drama
RUSS	2624	Drama of the 17th-19th Century
RUSS	2630	Russian Novel 1
RUSS	2631	Russian Novel 2
RUSS	2632	Russian Novel 1850-1870
RUSS	2640	Russian Literature on the Screen

AUTHOR

RUSS	2300	Pushkin
RUSS	2301	Pushkin and Lermontov
RUSS	2302	Gogol
RUSS	2303	Turgenev
RUSS	2305	Tolstoy
RUSS	2306	Dostoevsky
RUSS	2307	Chekhov
RUSS	2313	Nabokov
RUSS	2314	Mandelstam
RUSS	2315	Bulgakov
RUSS	2316	Pasternak
RUSS	2317	Solzhenitsyn

TOPICS

RUSS	2401	Russian Folklore
RUSS	2420	Literary Movements 1: Pre-Romanticism and Romanticism
RUSS	2430	Literary Movements 2: Realism
RUSS	2450	Symbolism, Acmeism, Futurism
RUSS	2451	Symbolist Movement: Russian Prose
RUSS	2452	Socialist Realism
RUSS	2471	Russian Women Writers

INDEPENDENT AND DIRECTED STUDY

SLAV	2902	Directed Study
SLAV	2990	Independent Study
SLAV	3000	Research and Dissertation for the PhD Degree
SLAV	3902	Directed Study
RUSS	2990	Independent Study
RUSS	2995	PhD Russian Reading
RUSS	3000	Research and Dissertation for the PhD Degree

SOCIOLOGY

The Department of Sociology offers students the opportunity to apply the full range of sociological theories and sociological methodologies to problems of structured social inequalities and their emergence, forms, and consequences for identities and conflicts at all levels from small groups to global social formations. The department is particularly strong in the studies of social inequalities of gender, race, class, and nation.

There are three overlapping approaches to the study of social inequalities represented in the department. One focuses on the interconnections among gender, race, and social class as dimensions of inequality and resistance. Another examines social inequalities in comparative, historical, and global perspective. A third focuses on the social network dynamics and processes that establish, maintain, or dissolve structured social inequalities.

Graduate students are encouraged to combine their work in sociology with multidisciplinary study in a particular area by enrolling in one of the following certificate programs: Asian Studies, Cultural Studies, Eastern European Studies, Latin American Studies, Russian Studies, West European Studies, or Women's Studies.

CONTACT INFORMATION

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FACILITIES

The Department of Sociology has a computer classroom and graduate computing laboratory. This facility contains 13 networked computers: eight Windows and four Mac+Windows stations, plus an instructor's Windows device. All computers are connected to the University's main applications server. The department also maintains a Sun server that provides databases of particular interest to sociologists, including the historical U.S. censuses, social network databases, and various demographic databases.

PUBLICATIONS

Journal of Mathematical Sociology: Members of the department founded the journal in 1971. For the last fourteen years, the journal has been edited in the department.

ADMISSIONS

Entrance into programs leading to the Master of Arts and Doctor of Philosophy degrees in Sociology requires a baccalaureate degree in one of the arts or sciences from an accredited institution of higher learning acceptable to the Department of Sociology and the University of Pittsburgh. Qualified students from any discipline are considered for admission.

Prerequisite for admission to the PhD program is a Master of Arts degree or equivalent preparation (plus approval from the Admissions Committee). Students entering with an MA degree from another institution may petition the Admissions Committee for a waiver of the core courses and a transfer of credits.

Applicants must submit to the departmental Director of Graduate Studies transcripts of all college-level work, three letters of recommendation, a career statement, and scores on the verbal, quantitative, and analytical sections of the Graduate Record Examination. International applicants are also required to submit TOEFL scores. Two copies of the Application for Admission to Graduate Study form should be completed and submitted along with the application fee. Applications are accepted for Fall Term admission

until April 15. To be considered for financial awards, applications must be completed by March 15 (January 15 for international applicants). The department admits students only for the Fall Term.

FINANCIAL ASSISTANCE

Teaching assistantships and fellowships, Andrew W. Mellon Predoctoral Fellowships, Foreign Language and Area Studies Fellowships (administered by the **University Center for International Studies**), Provost Development Fellowships and graduate student research assistantships are available. *See Fellowships and Traineeships on page 36 of the FAS section of the bulletin for details.*

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER’S DEGREE

For the MA degree, students must earn 36 credits in approved graduate courses. The 36 credits must include completion of the 18-credit core course sequence: Central Themes in Social Theory, Research Design, either Qualitative or Quantitative Methods, Teaching Seminar, and two concentration seminars with grades of B or better. Students must then pass an examination covering one of the general fields: global and comparative sociology; social network processes; or gender, race and class. This examination, together with the required course work, will serve as a basis for granting the Master of Arts degree and admission into the doctoral program.

First-year graduate students will be advised by the Director of Graduate Studies. After a student completes one term of full-time graduate work, she or he will choose an advisor who represents the field that the student plans to choose for the MA comprehensive examination.

REQUIREMENTS FOR THE PhD DEGREE

CREDIT REQUIREMENT

The PhD program requires 72 credits earned from a combination of the required core course sequences, MA courses, additional graduate sociology seminars, and any suitable combination from course work, independent study, research, or dissertation work.

ADVISING AND SUPERVISION

First-year graduate students will be advised by the Director of Graduate Studies. After a student completes one term of full-time graduate work, the student will choose an advisor who represents the field that the student plans to choose for the MA comprehensive examination. In preparation for the PhD comprehensive examination, students will establish a comprehensive committee consisting of three Graduate Faculty members: two examiners (one of which will be designated as chair) from the major area of study and one examiner from the minor area. Following successful completion of the comprehensive examination, the student will form a doctoral committee, consisting of four Graduate Faculty members, including one faculty member from a department other than Sociology. All doctoral committees must be approved by the full faculty of the department.

SUPERVISED TEACHING EXPERIENCE

Supervised teaching experience is an integral part of the doctoral program. Typically, teaching experience is gained by conducting recitation sections of an introductory course, by assisting a faculty member in an undergraduate course, or by teaching an undergraduate course.

COMPREHENSIVE EXAMINATION

The PhD comprehensive examination consists of two stages. The first stage is either a take-home or in-class written examination covering questions in the student’s major and minor fields. The second stage, contingent upon successful completion of the written examination, consists of an oral examination covering both fields. Two-thirds of the comprehensive examination will focus on one of the three general concentration fields of sociology offered by the department: global and comparative sociology; social network processes; or gender, race, and class. One-third of the examination will be on the student’s minor field, which may include work done in other departments. The comprehensive examination should be taken at the middle or end of the student’s third year of study.

DISSERTATION OVERVIEW

At this stage students will have selected, in consultation with their dissertation committee, a suitable dissertation topic. Students present a written prospectus to their committee describing the purpose, scope, and method of proposed study and the sources upon which it will be based. Students are encouraged to give careful thought early on in their graduate work to possible doctoral research topics and discuss their interests with related faculty.

FINAL ORAL EXAMINATION

The final oral examination in defense of the doctoral dissertation is conducted by the dissertation committee.

COURSE LISTINGS

SOC	2004	Central Themes of Social Theory
SOC	2005	Research Design
SOC	2011	Global and Comparative Seminar 1
SOC	2012	Global and Comparative Seminar 2
SOC	2021	Social Networks Seminar 1
SOC	2022	Social Networks Seminar 2
SOC	2031	Gender, Race, Class Seminar 1
SOC	2032	Gender, Race, Class Seminar 2
SOC	2101	Sociological Theory 1—Classical
SOC	2102	Sociological Theory 2—Post-classical
SOC	2103	Sociological Theory 3—Recent
SOC	2104	Formal Theory
SOC	2122	Seminar on Contemporary Theory
SOC	2201	Statistical Methods
SOC	2202	Quantitative Methods
SOC	2203	Qualitative Methods
SOC	2204	Computer Methods
SOC	2222	Social Network Analysis
SOC	2223	Simulation of Social Processes
SOC	2230	Comparative Research
SOC	2231	Evaluation Research

SOC	2240	Seminar in Population
SOC	2302	Sociology of Religion
SOC	2303	Political Sociology
SOC	2304	Modernization
SOC	2306	Sociology of Revolution
SOC	2307	Nationality and Citizenship
SOC	2316	Collective Memory
SOC	2332	Research Topics on Latin America
SOC	2340	World Systems: Theory and Research
SOC	2341	Social Movements
SOC	2342	Cultural Sociology
SOC	2401	Societal and Global Inequalities
SOC	2402	Complex Organizations
SOC	2403	Knowledge in Society
SOC	2404	Social Psychology
SOC	2405	Economic Sociology
SOC	2406	Medical Sociology
SOC	2425	Mental Health and Illness
SOC	2426	Historical, Sociological Perspectives of Public Health
SOC	2429	Women in Society
SOC	2430	Comparative Social Policies
SOC	2431	Health Organizations and Professions
SOC	2442	Deviance
SOC	2451	Family
SOC	2461	Structural Sociology
SOC	2970	Professionalization and Teaching Seminar
SOC	3193	Feminist Theory
SOC	3342	Sociology of Education
SOC	3343	Comparative Education

STATISTICS

The Graduate Faculty in the Department of Statistics offers various programs of study and research in statistics. Degree programs lead to the Master of Arts or Master of Science in Applied Statistics, the Master of Arts or Master of Science in Statistics, and the Doctor of Philosophy in Statistics. These may be pursued by full-time and part-time students. The department also provides courses for students engaged in graduate studies in other disciplines requiring statistics and for individuals requiring specialized statistical skills in the workplace. Full details of all programs and departmental regulations are contained in the handbook, *Graduate Study in Statistics at the University of Pittsburgh*, which can be obtained from the Department of Statistics in 2700 Cathedral of Learning, by E-mail or phone to the address and number listed below.

CONTACT INFORMATION

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RESEARCH

The research interests of the department are broad. Particular research strengths of the department's faculty include statistical modeling, applied probability theory, discrete and continuous multivariate statistical analysis, reliability theory, time series, statistical meta-analysis and applications of statistical methods to research in other disciplines. Areas of application of statistics that are of current interest to department faculty include biology, chemistry, education, engineering, environmental science, material science, medicine, psychiatry, and psychology.

FACILITIES

The facilities of the department include the department's own computer labs with the latest statistical software as well as cooperative arrangements with many major scientific organizations within the University, such as the Pittsburgh Cancer Institute, the Center for the Neuroscience of Mental Disorders, the Western Psychiatric Institute and Clinic, the Learning Research and Development Center, and the Departments of Biostatistics and Epidemiology in the **School of Public Health**. Statistics students may have assistantship appointments and share laboratory and clinical facilities with these organizations.

The department shares a library with the Department of Mathematics that contains more than 18,000 volumes and 225 research journals. Additional research resources are located in other libraries on campus and through the Internet.

The Center for Statistics, which is a part of the department, is involved in statistical consulting and applied research, and is an excellent source of practical experience for graduate students.

ADMISSIONS

A basic requirement for admission to the graduate program in statistics is the completion of a bachelor's degree from an accredited institution in the United States or the completion of a level of education that the University of Pittsburgh deems comparable to a U.S. bachelor's degree. Applicants must also possess sufficient proficiency in the English language. Official scores of 550 or above on the Test of English as a Foreign Language (TOEFL) are required if the applicant's native language is not English. Graduate Record Examination (GRE) scores are optional, but recommended.

Decisions regarding admission are based on the applicant's official credentials, quality point averages, and the availability of faculty and facilities to meet the applicant's expressed academic or research needs and interests. With limited space available, not all qualified applicants can be admitted.

The minimal course requirements for admission into the graduate programs of the Department of Statistics are:

- Three terms of calculus
- Linear algebra (including matrices)
- One year of probability and statistics, preferably an introductory mathematical statistics sequence

Students lacking some of these prerequisites may be admitted provisionally at the discretion of the Graduate Committee. In addition, students intending to pursue the PhD degree should either have taken a one-term course in advanced calculus, or be prepared to take such a course in the first year of graduate study.

FINANCIAL ASSISTANCE

Financial assistance for graduate students is provided in the form of teaching and research assistantships, fellowships, tuition scholarships and loans. Application for financial aid should be made on the application form for admission to graduate study. All applications for financial assistance are reviewed in the department with award decisions made on the basis of prior academic excellence and achievement and perceived potential for contributions to the field of statistics.

Students applying for fellowships or assistantships for the Fall Term should file their applications no later than February 15 of the same year.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

The department encourages its students to obtain a broad background in statistics, including both methods and theory courses, regardless of whether they specialize in applied statistical methodology or in statistical theory. Consequently, two-term sequences in applied statistical methods (STAT 2131-2132) and intermediate mathematical statistics (STAT 1631-1632) are common to all master's degree programs offered by the department, and are also generally taken by students whose goal is the PhD in Statistics.

MASTER OF ARTS IN APPLIED STATISTICS

Department requirements for the Master of Arts in Applied Statistics are the completion of 33 credits, including the two year-long sequences STAT 1631-1632 and STAT 2131-2132 mentioned above, at least three credits in consulting, four courses (12 credits) in statistical methods or theory taken from a list of choices, and an approved two-course sequence (six credits) taken at the graduate level in a discipline other than statistics. The final requirement for this degree is passing, at the master's level or above, a qualifying examination covering topics from applied and theoretical statistics, including the material in STAT 1631-1632 and STAT 2131-2132. For full-time graduate students, this exam is usually taken at the beginning of the Fall Term of the second year of graduate study. Part-time graduate students will want to take the preliminary examination at the earliest opportunity after finishing STAT 1631-1632 and STAT 2131-2132.

MASTER OF ARTS IN STATISTICS

The Master of Arts in Statistics differs from the Master of Arts in Applied Statistics by replacing the requirements of a two-course sequence in a discipline other than statistics and three credits in consulting with the requirement that three additional three-credit graduate-level statistics courses be taken. Both master's degrees require

completion of 33 credits and the passing of the preliminary examination.

MASTER OF SCIENCE

The requirements for the Master of Science, either in Applied Statistics or in Statistics, are the same as the requirements for the corresponding Master of Arts degree, except that two three-credit statistics courses are replaced by six credits of STAT 2001 (Research and Thesis for the MS Degree), and an oral defense of the thesis is required.

REQUIREMENTS FOR THE PHD DEGREE

The main requirement for the Doctor of Philosophy degree in Statistics is the successful completion and defense of a dissertation making a substantial and original contribution to statistics, probability, or their application. Prior to embarking on their research, candidates must pass the preliminary exam (see *Requirements for the Master's Degree* above) at the PhD level and pass an oral comprehensive examination that covers material from STAT 1631-1632, 2631 and 2711-2712 and any other material which the student's advisory committee believes is necessary background for the dissertation research. The purpose of the comprehensive examination is to demonstrate that students are able to understand, summarize, and make use of the statistical literature in an area of potential research that is of interest to them. Students who have found a specific topic for their dissertation are encouraged to combine the comprehensive examination with the presentation of the dissertation proposal. Students who are not yet ready to assemble a dissertation committee and present a proposal can still take the comprehensive exam, but must later submit a dissertation proposal orally and in writing to their advisory committee.

Course requirements for the PhD degree are STAT 2631 (Theory of Statistics), 2641 (Asymptotic Methods), 2661 (Theory of Linear Models) and 2711-2712 (Probability Theory) or their equivalent. PhD candidates are also required to take at least three credits in statistical consulting; those students anticipating a career involving consulting are advised to take a substantial number of consulting credits. The remaining courses of the 72 credits required for the PhD degree will be decided in conjunction with the student's advisor and should consist of mainly formal courses prior to the commencement of research for the dissertation.

The department has no foreign language requirements for the PhD degree. Although not required, facility in the use of one or more computer programming languages, especially those used in writing statistical software (for example, S+), is highly recommended.

Full-time graduate students usually take between four and five years to complete a PhD degree. Part-time students may be allowed as many as 10 years to finish all requirements. Additional information concerning examinations, requirements, and the advising system can be found in the departmental handbook.

COURSE LISTINGS

UNDERGRADUATE COURSES THAT MAY CARRY GRADUATE CREDIT

STAT	1201/2200	Applied Nonparametric Statistics
STAT	1211/2210	Applied Categorical Data Analysis
STAT	1221**/1220*	Applied Regression
STAT	1231*/2230*	Applied Experimental Design
STAT	1241/2240	Applied Sampling

STAT 1251/2250	Statistical Quality Control
STAT 1291-4	Topics in Applied Statistics 1-4
STAT 1301/2300	Statistical Packages
STAT 1311/2310	Applied Multivariate Analysis
STAT 1321/2320	Applied Time Series
STAT 1631	Intermediate Probability
STAT 1632	Intermediate Mathematical Statistics
STAT 1651	Bayesian Statistics
STAT 1661	Linear Regression
STAT 1662	Nonlinear Regression
STAT 1681	Introduction to Sequential Analysis
STAT 1731**	Stochastic processes
STAT 1741	Applied Probability Theory
STAT 1761	Game Theory
STAT 1771	Queueing Theory
STAT 1781	Combinatorics
STAT 1791-4	Topics in Probability and Statistics 1-4

COURSES CARRYING GRADUATE CREDIT

STAT 2001	Research and Thesis for the Master's Degree
STAT 2010	Statistics Seminar
STAT 2020	Teaching Seminar
STAT 2081*	Modern Data Analysis for Research Workers
STAT 2131-2	Applied Statistical Methods 1-2
STAT 2200	Applied Nonparametric Statistics
STAT 2210	Applied Categorical Data Analysis
STAT 2211	Categorical Data Analysis
STAT 2220*	Applied Regression
STAT 2221	Advanced Applied Multivariate Analysis
STAT 2230*	Applied Experimental Design
STAT 2231	Advanced Applied Regression
STAT 2240	Applied Sampling
STAT 2241	Sampling Theory
STAT 2250	Statistical Quality Control
STAT 2251	Statistical Process Control
STAT 2261	Survival Analysis
STAT 2281	Principles of Statistical Consulting
STAT 2291	Meta-analysis
STAT 2300	Statistical Packages
STAT 2310	Applied Multivariate Analysis
STAT 2320	Applied Time Series
STAT 2321	Applied Advanced Time Series
STAT 2381	Supervised Statistical Consulting
STAT 2391-4	Advances in Applied Statistics 1-4
STAT 2401	Methods in Mathematical Statistics
STAT 2521-2	Time Series 1-2
STAT 2611-2	Theory of Multivariate Analysis 1-2
STAT 2631-2	Theory of Statistics 1-2
STAT 2641	Asymptotic Methods in Statistics
STAT 2661-2	Linear Models Theory 1-2
STAT 2691	Nonparametric Theory

STAT 2711-2	Probability Theory 1-2
STAT 2731-2	Applied Stochastic Processes 1-2
STAT 2751-2	Reliability Theory 1-2
STAT 2991	Independent Study
STAT 3001	Research and Dissertation for the PhD Degree
STAT 3131-4	Topics in Applied Statistics 1-4
STAT 3141-2	Topics in Linear Models and Experimental Design 1-2
STAT 3261	Counting Processes in Survival Analysis
STAT 3341-2	Advanced Modern Statistical Computing
STAT 3521-2	Topics in Time Series 1-2
STAT 3611-4	Topics in Multivariate Analysis 1-4
STAT 3631-2	Advanced Theory of Statistics 1-2
STAT 3641-4	Topics in Advanced Statistics 1-4
STAT 3711-2	Topics in Probability Theory 1-2
STAT 3731-4	Topics in Stochastic Processes 1-4
STAT 3751-4	Topics in Reliability Theory 1-4
STAT 3901	Directed Study

THEATRE ARTS

The Theatre Arts Department offers the MA, MFA, and PhD degrees in Theatre Arts. The programs integrate training and practice in the theatre with scholarship and research in the liberal arts tradition.

Departmental programs are described in more detail in materials available from the Admissions Secretary; Department of Theatre Arts; 1617 Cathedral of Learning; University of Pittsburgh; Pittsburgh, PA 15260.

CONTACT INFORMATION

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THEATRICAL PRODUCTION AT THE UNIVERSITY

A large number of plays are offered each year in the three campus theatres: a 560-seat proscenium house in a national historic landmark building, a 150-seat thrust, and a Black Box. These theatres offer 12-15 productions during the academic year, directed and designed by faculty members, graduate and undergraduate students, and acted by students. The department also has an extensive touring program in area schools.

THEATRE RESOURCES IN PITTSBURGH

Several special resources are available to graduate students in theatre at the University. Hillman Library's Curtis Theatre Collection of materials on New York and Pittsburgh theatre is at their disposal. Other major libraries within a five minute walk from the University are the

* Not accepted for any graduate degree in Statistics or Applied Statistics

** Not accepted for any graduate degree in Applied Statistics

Carnegie Public Library of Pittsburgh and Carnegie Mellon's Fine Arts Collection.

Theatre productions, in addition to those on the University's schedule, may be seen regularly at Carnegie Mellon, at the Pittsburgh Public Theater, the City Theatre, at numerous small theatres, and at Pittsburgh's facilities for professional traveling productions—Heinz Hall, the Benedum Center, and the Byham Theatre.

ADMISSIONS

The MA in Theatre Arts at the University of Pittsburgh is open to all qualified students who have completed, or will complete prior to registration, an undergraduate degree. An undergraduate major in theatre arts is not a prerequisite for admission to the program. A student body comprising diverse backgrounds and approaches to theatre is consistent with the department's philosophy of theatre education.

It is possible for MA candidates in theatre arts to achieve Certification for Secondary School Teaching in Pennsylvania by coordinating their course of theatre study with the appropriate courses in the **School of Education**. Students interested in pursuing this option should secure the advice and guidance of the advisor for secondary education in the **School of Education**.

The Doctor of Philosophy program is open to all qualified students who have completed, or who will have completed prior to registration, a Master of Arts degree or its equivalent. An MA in Theatre Arts is not a prerequisite for admission to the program. The department admits some highly qualified BAs directly into the PhD program. These students proceed to the higher degree more efficiently, receiving an MA en route.

Applicants are expected to demonstrate superior writing and research skills and to have substantial background in dramatic literature and theatre history. The GRE is required, along with samples of research writing and a personal statement of objectives.

FINANCIAL ASSISTANCE

The department offers a number of teaching assistantships, teaching fellowships, graduate student assistantships, and other forms of financial aid for qualified applicants. Further details are available from the department and in the Financial Aid section of this bulletin on page 7.

DEGREE REQUIREMENTS

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations beginning on page 17, and any additional requirements of FAS Graduate Studies described under FAS Degree Requirements on page 39, should be read in conjunction with program-specific degree requirements described in the following sections.

REQUIREMENTS FOR THE MASTER'S DEGREE

The department offers two master's degrees, the MA and the MFA:

MA IN THEATRE ARTS

A minimum of one and a half years or three terms in residence is required for the completion of the degree. Normally, degree requirements may be completed by passing 33 credits of course work.

The faculty will, however, administer a diagnostic examination to the student prior to or during the first term of residence to determine if the student should be assigned course work beyond minimum requirements. The student is required to pass a comprehensive examination. Highly qualified students may be admitted to the combined MA/PhD program.

MFA IN THEATRE ARTS

For individuals with significant professional experience (over five years) seeking a degree qualifying them to teach, the two-year MFA pedagogical program may be available. Inquire at the department.

REQUIREMENTS FOR THE PhD DEGREE

The PhD program in Theatre and Performance Studies seeks to develop philosophers of theatre and attempts to integrate theory with practice. Candidates for the PhD in Theatre Arts must eventually demonstrate a deep commitment to scholarship and teaching. Interdisciplinary and independent studies are normally expected. Completion of a master's degree or its equivalent is required of the candidate. Students who have received their MA degree from an institution other than the University of Pittsburgh will be subject to evaluation by the Graduate Faculty as a condition for admission to the doctoral program.

Candidates for the PhD must demonstrate knowledge of a foreign language at an advanced level, demonstrate competence through qualifying and comprehensive exams, and write a dissertation. Specific research interests of faculty members include dramatic theory, Greek theatre, 19th- and 20th-century theatre, Shakespeare, American theatre, documentary theatre, Asian theatre, intercultural theatre, and the theory and historiography of performance. In addition, some faculty members are active as professional playwrights, dramaturgs, and facilitators of community-based theatre.

SPECIAL OPTION PROGRAM

Concurrent with candidates' preparation for scholarship and research in the field of theatre and performance studies, students may concentrate on a particular area of professional expertise to enhance their qualifications early in their professional careers. This additional specialization may be in administration, practical theatre, specialized educational skills, or fields related to theatre or supportive of teaching drama and theatre.

COURSE LISTINGS

The following courses carry graduate credit. Please see the department for a complete listing of undergraduate courses that can also be taken.

THEA	1340	Native American Theatre
THEA	1367	Contemporary American Dramatists
THEA	2000	Research and Thesis for the Master's Degree
THEA	2111	Acting 1—Diagnostic/Creating the Actor
THEA	2112	Acting 2—The Realistic Core/Foundation in Realism
THEA	2113	Acting 3—Shakespeare
THEA	2114	Acting 4—Poetic Drama and Styles
THEA	2115	Acting 5—One-person Show
THEA	2116	Acting 6—Thesis Project
THEA	2127	Movement 1
THEA	2128	Movement 2

THEA	2129	Movement 3	THEA	2206	History of the Theatre 2
THEA	2130	Movement 4	THEA	2210	Seminar–Dramatic Structure
THEA	2131	Stage Dueling	THEA	2212	Seminar in Dramatic Rhythm
THEA	2132	Period Movement	THEA	2214	Seminar in Dramatic Theory and Criticism–Tragedy
THEA	2133	Mime/Juggling	THEA	2215	Seminar in Dramatic Theory and Criticism–Comedy
THEA	2134	Lecoq Workshop	THEA	2216	Advanced Theory and Methodology
THEA	2140	Voice Production 1	THEA	2219	Women and Theatre
THEA	2141	Voice Production 2	THEA	2220	Seminar–Playwriting
THEA	2142	Accents and Dialects	THEA	2225	Greek and Roman Theatre
THEA	2143	Voice and Speech	THEA	2228	Elizabethan and Jacobean Drama
THEA	2148	Musical Theatre	THEA	2230	Seminar–Shakespeare’s Plays
THEA	2149	Professional Orientation	THEA	2231	History of Shakespeare Production
THEA	2150	Directed Study–Acting	THEA	2233	17th-century Theatre
THEA	2160	Directed Study–Directing	THEA	2235	18th-century Theatre
THEA	2161	Directing 1–Review, Diagnostic, Stage Dynamics, Problem Solving, Communications	THEA	2237	Studies in the 19th Century
THEA	2162	Directing 2–Stage Spaces, Central Image, Ensemble, Improvisations	THEA	2240	Seminar–Ibsen
THEA	2163	Directing 3–Departures from Realism	THEA	2243	Seminar–Shaw
THEA	2164	Directing 4–Poetic/Epic Drama	THEA	2245	Studies in American Theatre
THEA	2165	Directing 5–One-person Show	THEA	2250	Avant-Garde Theatre
THEA	2166	Directing 6–Thesis Project	THEA	2254	Contemporary British Theatre
THEA	2168	New Play Practicum	THEA	2258	Seminar–Contemporary Developments in the European Theatre
THEA	2170	Directed Study–Set, Costumes, Light	THEA	2260	Documentary Theatre
THEA	2171	Seminar–Stage Design	THEA	2270	Studies in Asian Theatre
THEA	2172	History of Costume	THEA	2271	Studies in Japanese Theatre
THEA	2175	Seminar–Advanced Lighting	THEA	2990	Independent Study
THEA	2178	Theatre Planning	THEA	2991	Professional Internship: Playwriting
THEA	2180	Scene Design 1	THEA	2992	Professional Internship: Dramaturgy
THEA	2181	Scene Design 2	THEA	2993	Professional Internship: Directing
THEA	2182	Prop Making	THEA	2994	Professional Internship: Acting
THEA	2183	Drafting	THEA	2995	Professional Internship: Design
THEA	2184	Stagecraft 2	THEA	2996	Professional Internship: Stage Management
THEA	2185	Rendering and Painting	THEA	2997	Professional Internship: Theatre or Business Management
THEA	2186	Costume Design 1	THEA	2998	Professional Management: Technology
THEA	2187	Costume Design 2	THEA	3000	Research and Dissertation for the PhD Degree
THEA	2188	Pattern Making			
THEA	2189	Stage Makeup			
THEA	2190	Stage Lighting 1			
THEA	2191	Stage Lighting 2			
THEA	2192	Design for Film			
THEA	2193	Stage Management 1			
THEA	2194	Stage Management 2			
THEA	2200	Directed Study: History, Literature, Criticism, Theory			
THEA	2201	Materials and Methods of Research in Theatre Arts			
THEA	2202	Theories of Theatre and Drama			
THEA	2203	Script Analysis			
THEA	2204	Theories of Acting and Directing			
THEA	2205	History of the Theatre 1			

WOMEN’S STUDIES

The Women’s Studies Program offers interdisciplinary undergraduate and graduate courses on a variety of topics. The program also cross-lists approximately 12 graduate courses and 30 undergraduate courses each semester during Fall, Spring, and Summer Terms. Women’s Studies accepts courses sponsored by individual departments within the University; course offerings are subject to change from term to term.

CONTACT INFORMATION

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 Phone: (412) 624-6485
 Fax: (412) 624-6492
 E-mail: womnst+@pitt.edu
 Web site: <http://www.pitt.edu/~womnst/>

Director: Kathleen Blee

Interested students should come to the program office to schedule an appointment with an advisor, or should contact the Director Women's Studies Program; 901-E Cathedral of Learning; University of Pittsburgh; Pittsburgh, PA 15260, or use the phone, E-mail, or Web site address listed above.

Steering Committee: ANDRADE (English), ANDREWS (Africana Studies), BERRIAN (Africana Studies), BLEE (Sociology), BRUSH (Sociology), CARR (English), COONTZ (Public and International Affairs), DETLEFSEN (Information Sciences), FRIEZE (Psychology), GLAZENER (English), HANSEN (Political Science), HARRIS (History of Art and Architecture), KORR (Social Work), LANDY (English), LEWIS (Western Psychiatric Institute and Clinic), McALLISTER (Public Health), MONTELARO (Women's Studies), MURRELL (Business), NESS (Epidemiology), NOVY (English), OLSON (Communication), OXFORD (Sociology), PETERSON (Public Health), PORTER (Education), STABILE (Communication), VANDER VEN (Social Work), WEISBERG (Religious Studies)

Affiliated Faculty: BERK-SELIGSON (Hispanic Languages and Literatures), CHEONG (English), CONSTABLE (Anthropology), GREENWALD (History), JIMÉNEZ (History), SALES (Social Work), VENARDE (History)

CERTIFICATE PROGRAM

For a master's-level certificate in Women's Studies, four courses counting toward a graduate degree either offered by or cross-listed with the Women's Studies Program are required. At least one of these courses must be outside the certificate candidate's major discipline, and candidates should take at least two courses in one field. No more than one course may be an independent study or directed reading. Candidates must have at least a 3.00 average in the four courses.

For a PhD-level certificate, six courses counting toward a graduate degree either offered by or cross-listed with the Women's Studies Program are required. [Note: Students will be advised to select courses cross-listed with Women's Studies, but individuals may petition to have accepted unlisted graduate courses with a considerable Women's Studies component or a major project in Women's Studies.] No more than two courses may be independent studies or directed readings. Candidates must have at least a 3.00 average in the six courses.

Certificate candidates on both the master's and PhD levels must submit a research paper to be read by two faculty designated by the Women's Studies' Steering Committee.

DIRECTED STUDY

Because Women's Studies is an interdisciplinary academic field, opportunities for innovative research are especially challenging. Students are encouraged to do research on special topics or other projects in a directed study course.

COURSE LISTINGS

For description of courses, see the *Course Descriptions* published each term.

CORE COURSES OFFERED BY WOMEN'S STUDIES PROGRAM

WOMNST	2240	Special Topics (including feminist methodologies and pedagogies)
WOMNST	2242	Feminist Theory
WOMNST	2902	Directed Study

DEPARTMENTAL COURSES IN WOMEN'S STUDIES

The section on the Women's Studies Program in the back of the *Schedule of Classes* published each term lists all Women's Studies offerings for that particular term. The following list is not complete.

ADMINISTRATIVE AND POLICY STUDIES

ADMPS	2089	Special Topics: Gender Issues in Pre-K-12 Education
ADMPS	2133	Gender Issues in Higher Education
ADMPS	2359	Gender, Education, and Third World Development

ANTHROPOLOGY

ANTH	2513	Gender and Archaeology
ANTH	2782	Special Topics: Gender and State
ANTH	3007	Ethnographic Approaches to Program Evaluation

BIOETHICS

BIOETH	2698	Special Topics: Feminist Approaches in Bioethics
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COMMUNICATION RHETORIC

COMMRC	2227	Media Theory: Feminist Media Studies
COMMRC	3302	Seminar in Rhetorical Criticism

CULTURAL STUDIES

CLST	2051	Feminist and Cultural Studies of Medicine and Technoscience
CLST	2454	Masculinity in Cinema

ENGLISH LITERATURE

ENGLIT	2011	Issues in Cultural Studies: Queer Theory
ENGLIT	2032	Gender and Discourse
ENGLIT	2094	Ethnic Women Writers
ENGLIT	2126	Shakespeare
ENGLIT	2128	Renaissance Discourses of Gender
ENGLIT	2175	Victorian Women Novelists
ENGLIT	2211	"Scribbling Women"/Classic Authors
ENGLIT	2256	Dramatizing American Women
ENGLIT	2285	Race and Gender in 20th-century Poetry
ENGLIT	2391	Women Writers From Africa and Diaspora
ENGLIT	2536	Working the Field: Representing Others
ENGLIT	3128	Historical Discourses of Gender
ENGLIT	3167	Nationalism and Sexual Politics

EPIDEMIOLOGY

EPIDEM	2710	Epidemiology of Women's Health
EPIDEM	2720	Environmental Causes of Reproductive Failure

FRENCH

FR 2105 Seminar: Medieval Topic—Christine du Pizan

HEALTH SERVICES ADMINISTRATION

HSADM 2532 Dimensions of Aging: Cultural and Health Description

HSADM 2560 Introduction to Population Problems

HSADM 2562 Seminar in Family Planning

HSADM 2570 Intro to Health Services for Mothers and Children

HSADM 2575 Seminar in Maternal and Child Health

HSADM 2599 Public Health Approaches to Women's Health

HSADM 3007 Ethnographic Approaches to Program Evaluation

HISTORY

HIST 2005 Special Topics

HIST 2069 Gender in Global Perspective

HISTORY OF ART AND ARCHITECTURE

HA&A 2301 Special Topics: Baroque Women's Bodies, Women's Roles

LAW

LAW 5216 Employment Discrimination

LAW 5373 Feminist Legal Theory

LINGUISTICS

LING 2269 Current Issues in Sociolinguistics

PHILOSOPHY

PHIL 2240 Special Topics: Philosophical Approaches to Feminism

POLITICAL SCIENCE

PS 2118 Gender, Race, and Public Policy

PS 2360 Comparative Politics: Women and Public Policy

PSYCHOLOGY

PSY 3130 Special Topics in the Psychology of Gender

PUBLIC AND INTERNATIONAL AFFAIRS

PIA 2193 Gender, Race, and Public Policy

PIA 2490 Women and International Development

RUSSIAN

RUSS 2471 Russian Women's Writing

SOCIAL WORK—HUMAN BEHAVIOR

SWBEH 2058 Women as Professionals and Clients

SOCIAL WORK—INTERPERSONAL SKILLS

SWINT 2011 Social Work Practice with Family

SWINT 2035 Family Violence

SWINT 2049 Direct Practice with Children

SWINT 2063 Child Abuse and Neglect: Sexual

SWINT 2064 Child Maltreatment: Physical Abuse

SWINT 2096 Clinical Social Work with African-American Families

SOCIOLOGY

SOC 2031 Gender, Race, Class Seminar 1

SOC 2032 Gender, Race, Class Seminar 2

SOC 2429 Women in Society

SOC 2430 Comparative Social Policies

SOC 3193 Topics in Feminist Social Theory

SOC 3491 Topics in Social Stratification

SPANISH

SPAN 2464 Social Identity and Gender Representation in Latin American Literature

FAS ADMINISTRATION

N. JOHN COOPER, *Dean, Faculty and College of Arts and Sciences*, DPhil, University of Oxford, England

STEVEN L. HUSTED, *Associate Dean for Graduate Studies and Research*, PhD, Michigan State University

JAMES F. KNAPP, *Associate Dean for Faculty Affairs*, PhD, University of Connecticut

BEVERLY A. HARRIS-SCHENZ, *Associate Dean for Undergraduate Studies*, PhD, Stanford University

W. RICHARD HOWE, *Associate Dean for Administration*, MEd, Indiana University of Pennsylvania

FAS FACULTY

Note: For a list of the graduate faculty in Arts and Sciences, please go to <http://www.pitt.edu/~graduate> and follow the link to the Graduate Faculty Roster.

DEPARTMENT OF AFRICANA STUDIES

JOSEPH E. ADJAYE, *Professor of Africana Studies and Chair of the Department*, PhD, Northwestern University

ADRIANNE R. ANDREWS, *Assistant Professor of Africana Studies*, PhD, Northwestern University

BRENDA F. BERRIAN, *Professor of Africana Studies, Doctorat de 3e cycle*, University of Paris-Sorbonne III

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